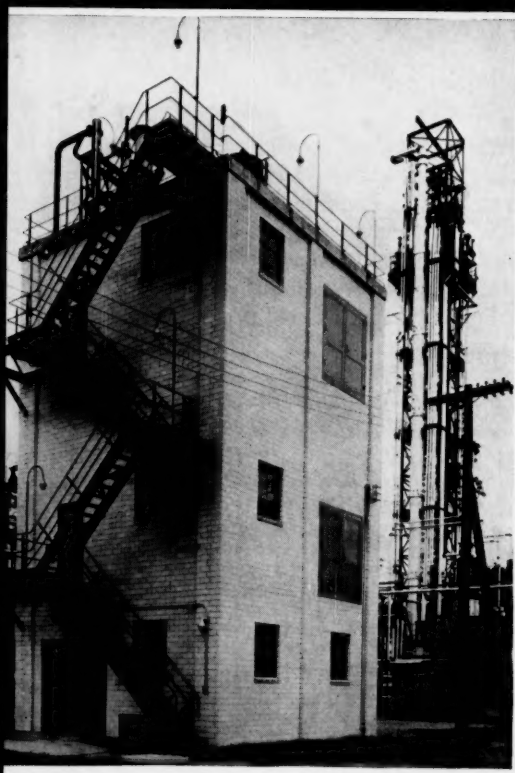


Chemical Week

August 10, 1957

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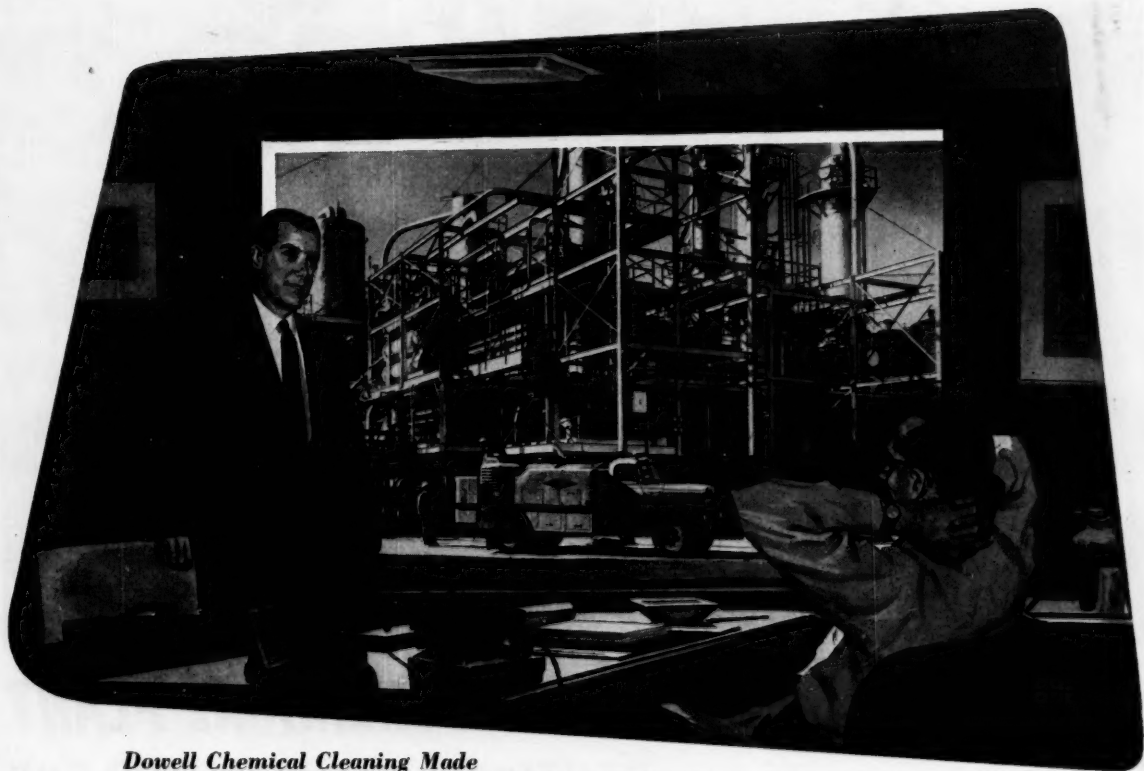
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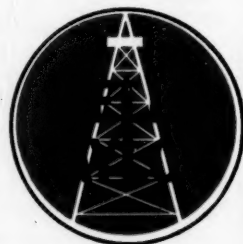
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TOP OF THE WEEK

August 10, 1957

- ▶ **The future tone of atomic industry has been set** by ratification of international atoms-for-peace agency, and by Congressional decision on U.S. atomic constructionp. 22
- ▶ **New record in capital spending** is established by Canadian chemical firms. Source of their money: internal funds . .p. 30
- ▶ **Research directors' nontechnical duties** are taking up more and more time; leisure hours are being affected, toop. 40
- ▶ **Nontechnically trained chemical salesmen** are being hired on purpose—not just to fill in when technical men can't be foundp. 54

14 OPINION

14 MEETINGS

17 BUSINESS NEWSLETTER

- 20 Profit margins for *CW*'s 25-company sample dropped in the first half, but second-half prospects are brighter.
- 22 The tone of industrial atomic development has been set by international, Congressional developments.
- 23 Columbia Gas and Commercial Solvents won't set up joint ethylene chemical venture; Columbia will go it alone.
Antidumping legislation considered at hearings may have considerable impact on chemical firms.
East German chemical industry pushes coordination efforts, may become substantial export competitor.

27 WASHINGTON NEWSLETTER

30 ADMINISTRATION

Chemical companies in Canada, like their U.S. counterparts, rely chiefly on internal financing to pay for expansion.

40 RESEARCH

Research directors report nontechnical duties are taking more of their time.

- 46 Rayonier unveils new laboratory machine for spinning high-strength viscose.

48 SPECIALTIES

Here's where Carter Products is headed.

- 50 Wholesale mail-orders are gold mine for Minnesota company.

54 SALES

More nontechnical chemical salesmen are being hired to sell more commodities.

- 56 Monsanto streamlines its big "M" trademark.

61 TECHNOLOGY NEWSLETTER

64 PRODUCTION

\$18-million plant upgrades Gilsonite to gasoline and coke. Will the next step be "gilsochemicals"?

71 MARKET NEWSLETTER

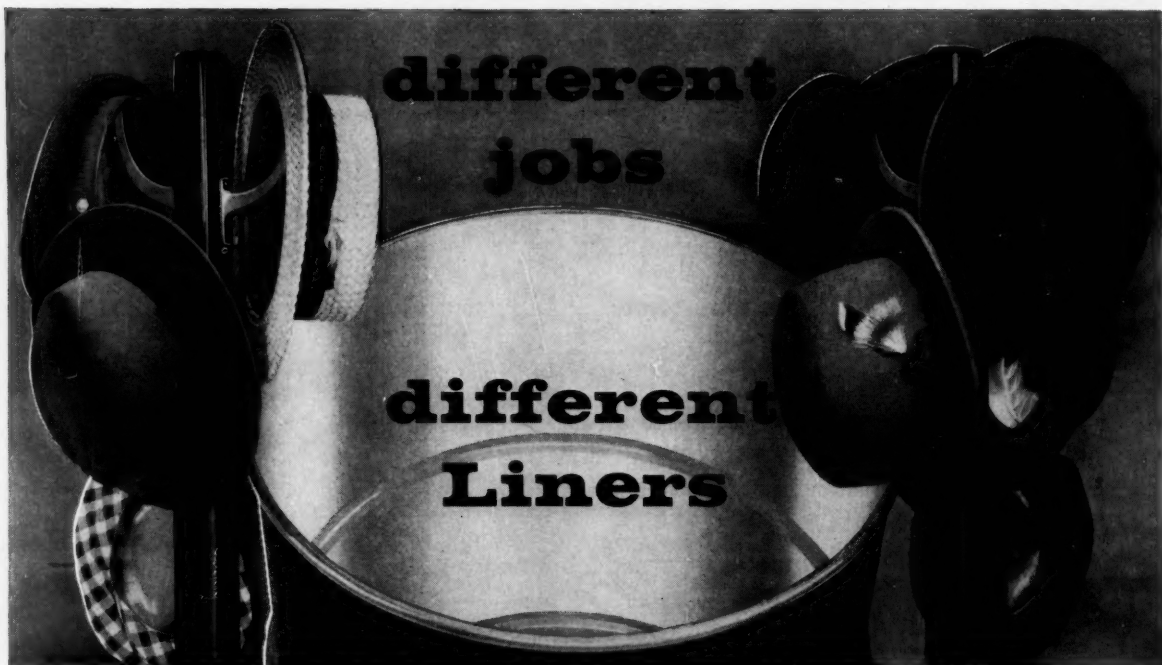
74 MARKETS

Importers and domestic producers of lead and zinc differ on the best way to stabilize their shaky industry.

80 ENGINEERING

Koppers plant teams commercial and developmental units to upgrade coal-tar chemicals.

- 84 Oil well fracturing system harnesses solid-propellant rocket fuel for industrial application.



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AUGUST 10, 1957

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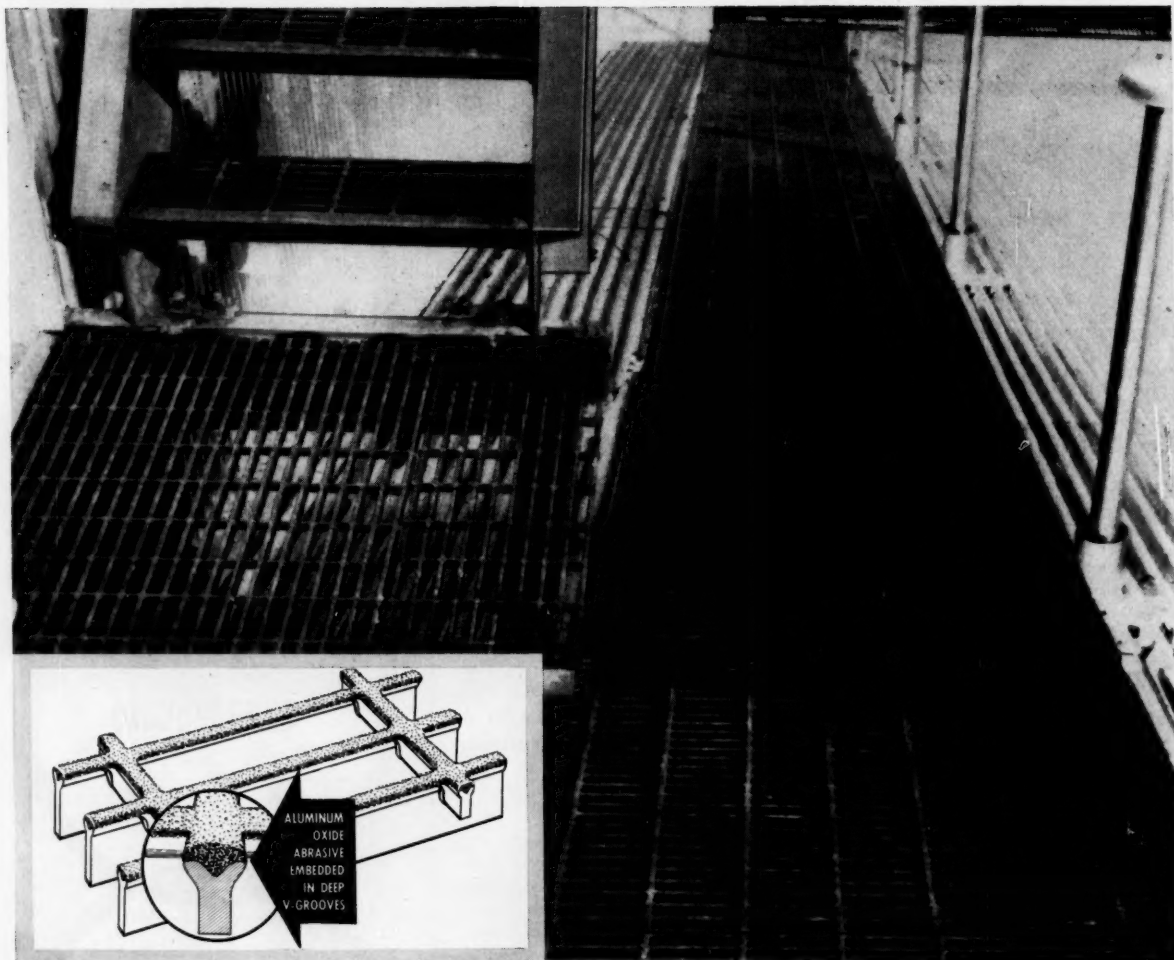
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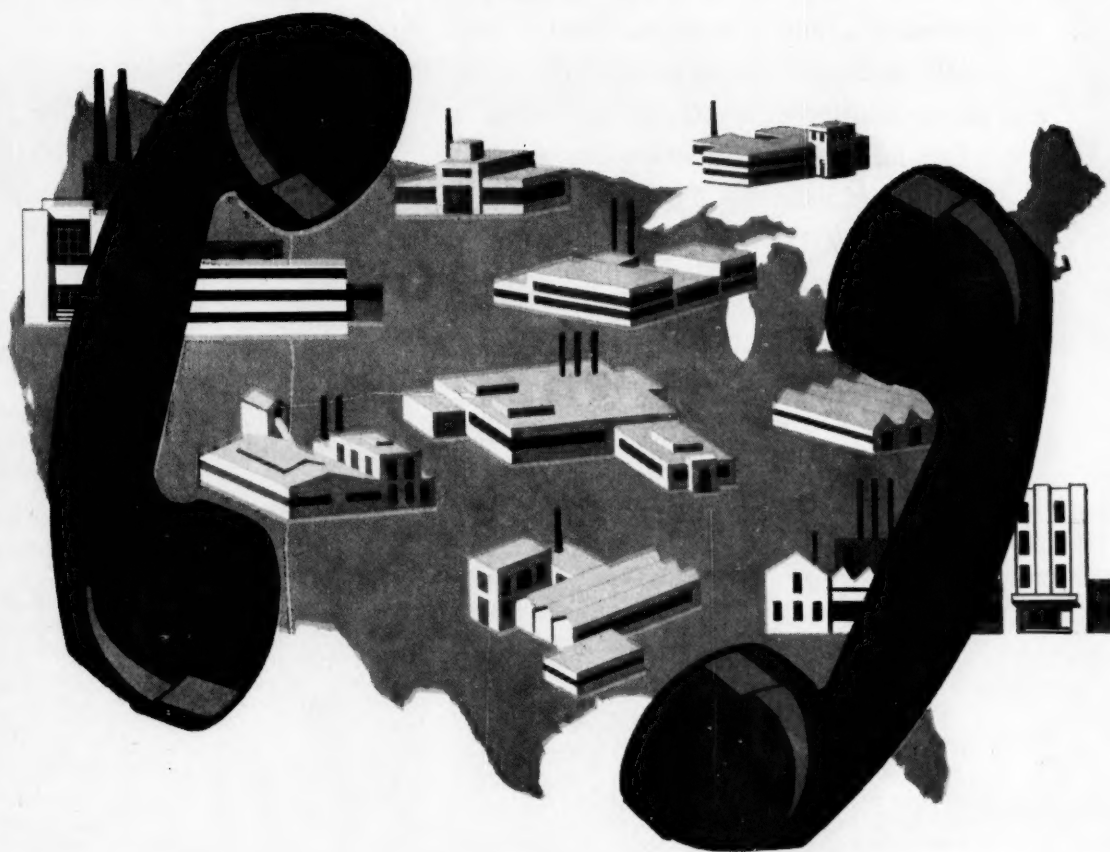
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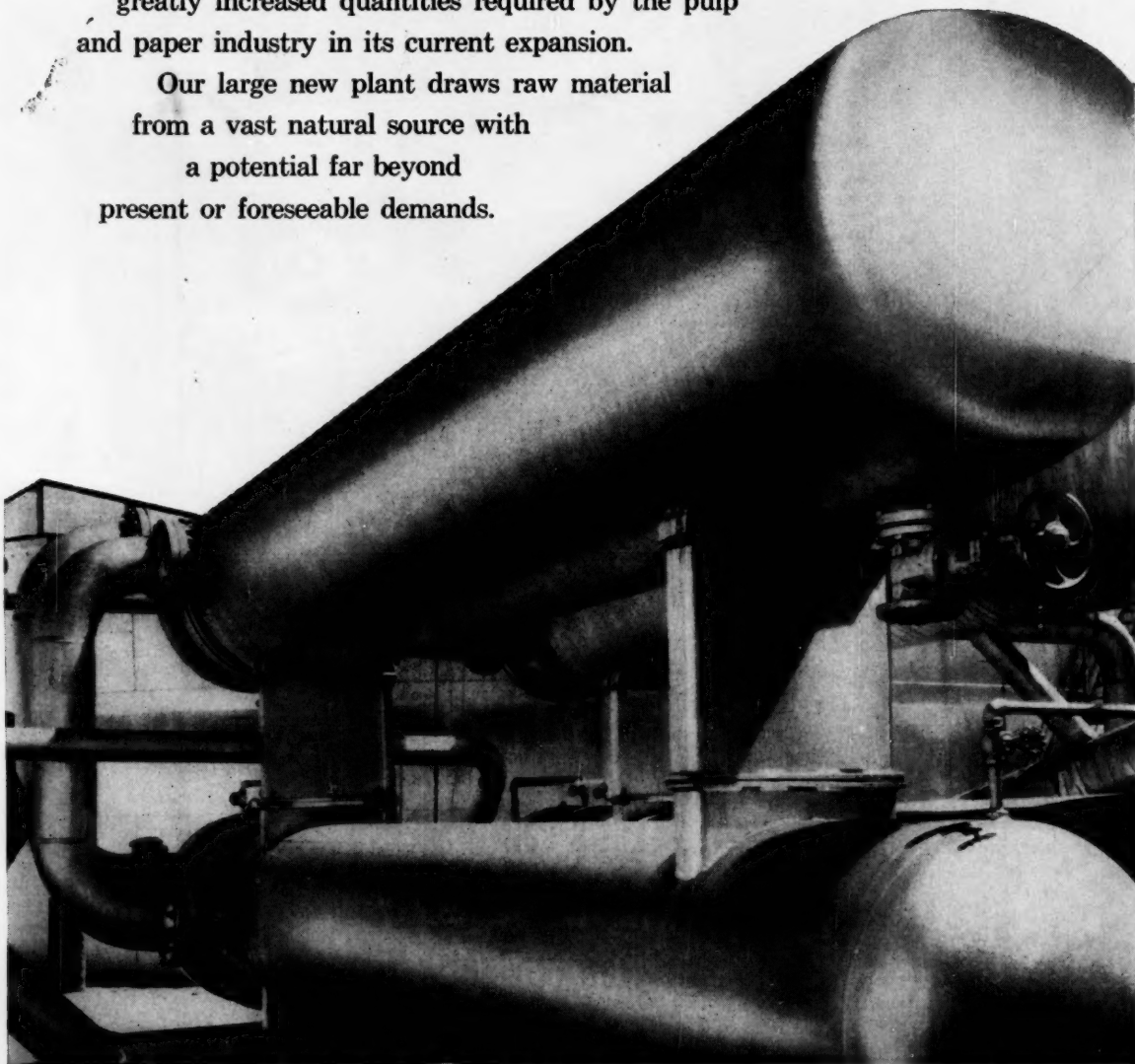


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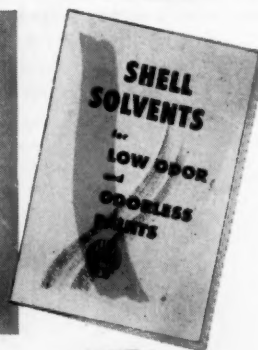
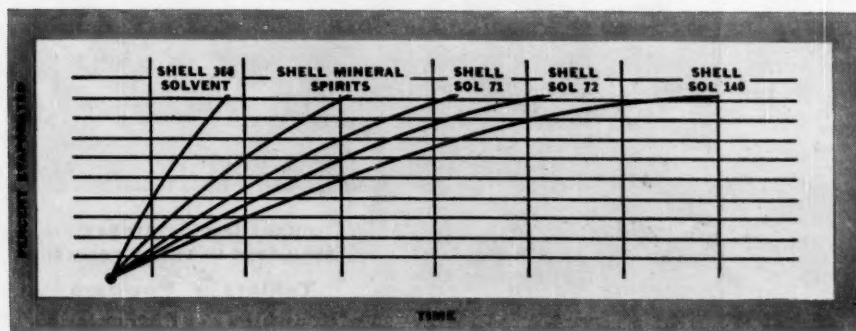
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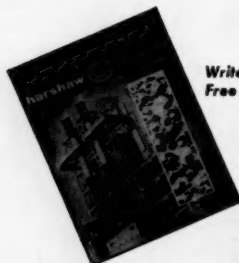
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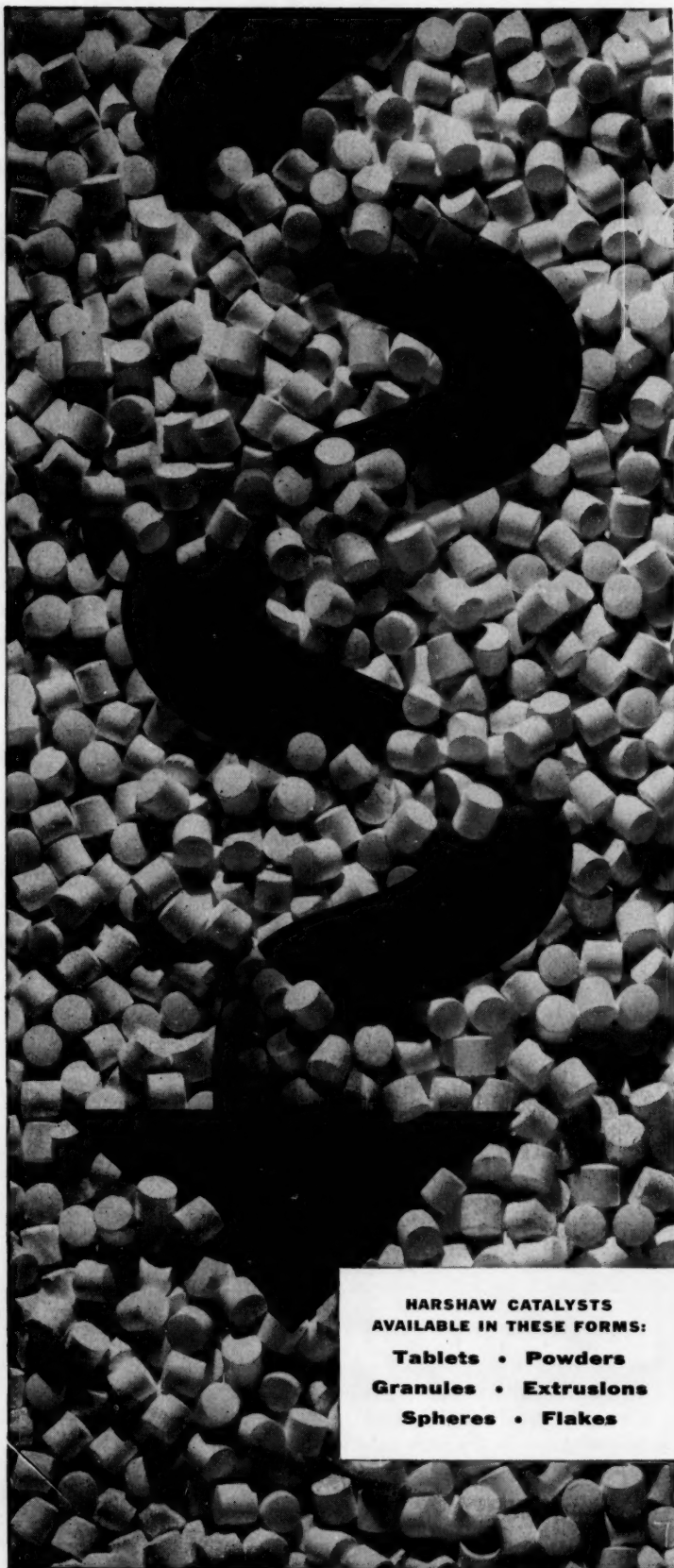
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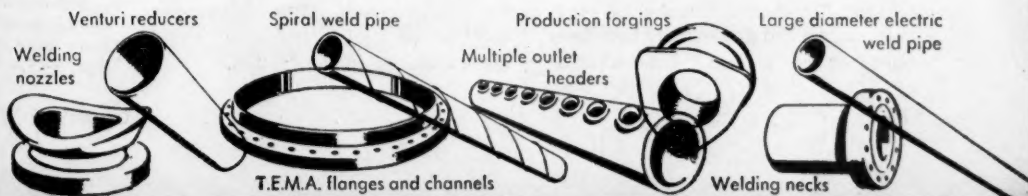
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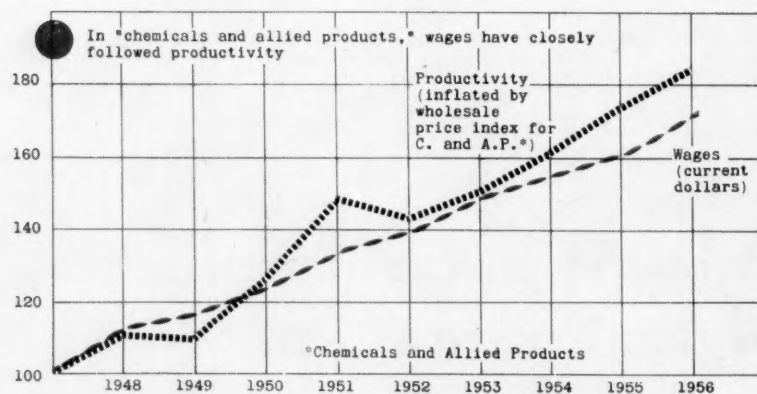
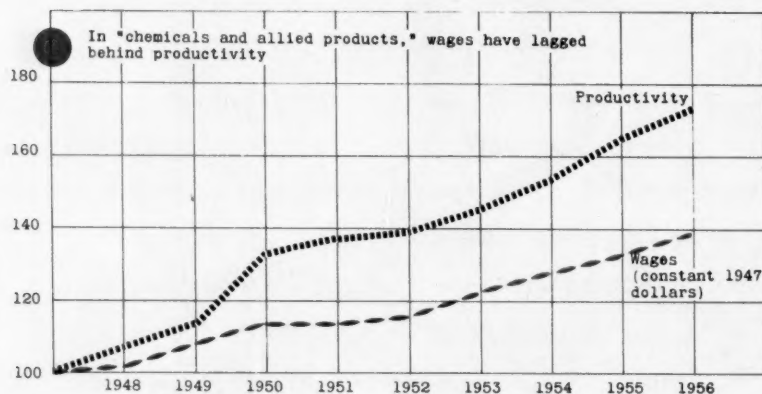
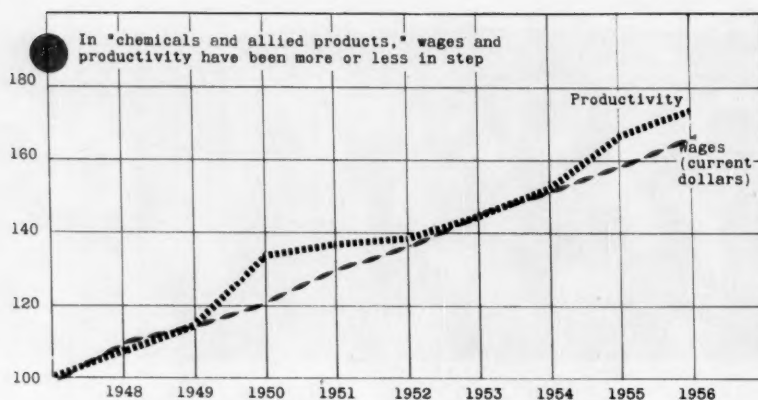
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OPINION



Whose Arithmetic Do You Like?

TO THE EDITOR: In reference to your article, "Link Wages to Productivity" (June 22):

Graph 2 (top graph, above) is captioned: "In chemicals and allied products, wages and productivity have been more or less in step." Even if man-

agement and labor agreed on linking wages to productivity, the type of measurement represented by your graph would provide ample grounds for disagreement. Two alternative ways of presenting the data would force a change in the caption.

A labor representative might very well argue that to compare physical production and money wages is unfair because of the decrease in purchasing power of the dollar. He would deflate "earnings" by means of the consumer price index and show that: "In chemicals and allied products, wages have lagged behind productivity," as is shown on the (center) graph.

An industry representative might reply that a more equitable procedure would be to compare "money earnings" with the value of production, since the whole idea is to give labor some constant share of the value of what he produces. He would then inflate the productivity index by means of the wholesale price index for chemical and allied products, and compare this with wages on a current dollar basis. This would reveal that: "In chemicals and allied products, wages have followed closely behind productivity increases" (bottom graph).

JOSEPH E. R. CARRIER
Assistant Editor, Economics
Chemical Economics Handbook
Stanford Research Institute
Menlo Park, Calif.

MEETINGS

American Institute of Chemical Engineers, and the American Society of Mechanical Engineers, 1st national conference on heat transfer, Pennsylvania State University, University Park, Pa., Aug. 12-15.

Northwestern University conference on liquid scintillation counting, Technological Institute, Evanston, Ill., Aug. 20-22.

American Soybean Assn. and National Soybean Processors Assn., annual meeting, Leamington Hotel, Minneapolis, Aug. 26-28.

Fisk University, 8th annual infrared spectroscopy institute, Nashville, Aug. 26-30.

Instrument Society of America, international symposium on gas chromatography, Kellogg Center for Continuing Education, East Lansing, Mich., Aug. 28-30.

National Agricultural Chemicals Assn., annual meeting, The Essex and Sussex, Spring Lake, N.J., Sept. 4-6.

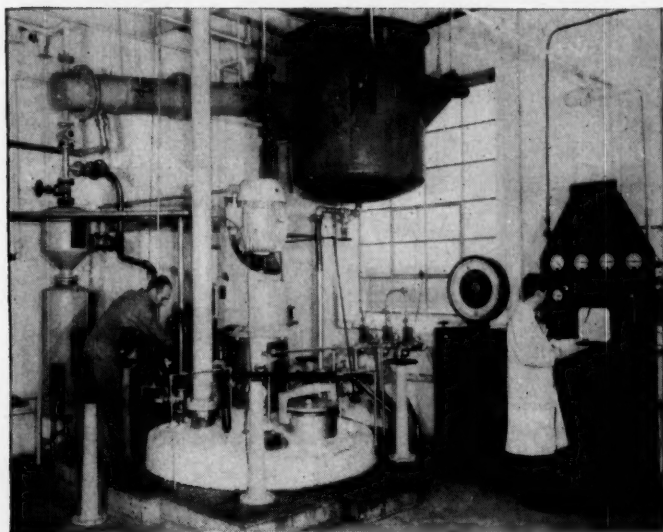
Instrument Society of America, 12th annual instrument automation conference and exhibit, Auditorium, Cleveland, Sept. 9-13.

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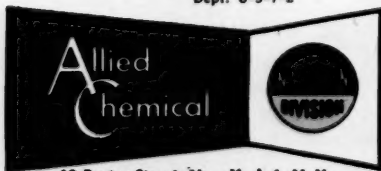
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Business Newsletter

CHEMICAL WEEK

August 10, 1957

Florida phosphate industry wage contracts are being negotiated quietly this year—a strong contrast with the strikes and violence of previous years. The five firms whose contracts have been up for renewal so far this year—Coronet Phosphate, Virginia-Carolina, American Agricultural, F. S. Royster, and U. S. Phosphoric—have all signed with the International Chemical Workers Union for wage increases averaging 6-7¢/hour.

Contracts with American Cyanamid and with International Minerals expire next week, but no trouble is expected in reaching renewal agreements.

El Paso Natural Gas is lining up buyers for its Canadian gas, even though its merger with Pacific Northwest Pipeline Co.—through which it would receive the Canadian gas—is under fire from the Federal Trade Commission (*CW*, Aug. 3, p. 24). Pacific Lighting Corp. has contracted to buy 200,000 mcf/day of Canadian gas to serve its customers in southern California markets. Provided the California Public Utilities Commission, the Federal Power Commission, and Canadian government agencies approve, gas would be delivered through a 34-in., 500-mile pipeline to be built between Las Vegas, Nev., and Twin Falls, Idaho.

Another Canada-U. S. pipeline will bring salt from Windsor, Ont., under the Detroit River to Allied Chemical's Solvay Process Division plant at Detroit. Canadian Salt Co. Ltd.'s Canadian Brine Co. will build two 10-in. lines, which will move an estimated \$500,000 worth of brine annually.

Allied Chemical's sale of 184,600 shares of U. S. Steel stock was explained last week in a letter to stockholders from Glen Miller, president. Miller said that proceeds from the sale will be used to finance the company's uranium and titanium construction programs. The nonrecurring profit from the sale will also mean 79¢/share additional income in Allied's third quarter—a fact that sent Allied's stock hopping two weeks ago when the selling was going on. Allied, incidentally, still owns 100,000 shares of U. S. Steel common.

Goodrich Chemical will expand its Darlan fiber facilities. Construction has been started on a project to triple its Avon Lake, O., unit. The boost in capacity, however, will not hike Darlan production to a truly commercial production scale. Instead, it will be used to provide further data on production cost, process designs. "Synthetic fur" and other high-pile fabrics made with Darlan have been in test markets for about three years.

Synthetic fibers are also in the news this week in Rumania. Now under construction near Piatra Neamt (in a Northern province) is a \$12-

Business

Newsletter

(Continued)

million unit for making caprolactam for nylon fiber. It's due in operation by the end of 1958, will produce about 15,000 lbs./day of the lactam.

U.S. nuclear reactor design and technology was endorsed, in effect (*CW*, May 25, p. 58), last week when Vitro Engineering Co. was selected to build a 500,000-kw (thermal) nuclear power station near Rome.

Under the contract, first foreign job of its kind to be awarded to a U. S. firm, the \$46.4-million installation will be ready by early 1962. Electrical power output: 140,000 kw.

Several major components for the power station, which will be operated by the Societa Italiana Meridionale Energia Atomica, will be procured in the U. S. This includes the pressurized water reactor—both Westinghouse and Babcock & Wilcox have shown interest in supplying this. Other components probably will be bought in Europe.

Still another Italian power project may lead to future contracts. The World Bank and the Italian government have agreed to sponsor a study of the feasibility of constructing a large station—electrical output: 150,000 kw.—for southern Italy. The study, known as Project E.N.S.I. (Energia Nucleare sud Italia), will determine whether a nuclear or a hydro-electric station would be more economical.

The project panel—headed by a Canadian, and including one Frenchman, one Italian, two U.K. nationals and two Americans—will recommend the site for a station and will prepare invitations to qualified manufacturers on an international basis; it will also review bids for the building of the plant.

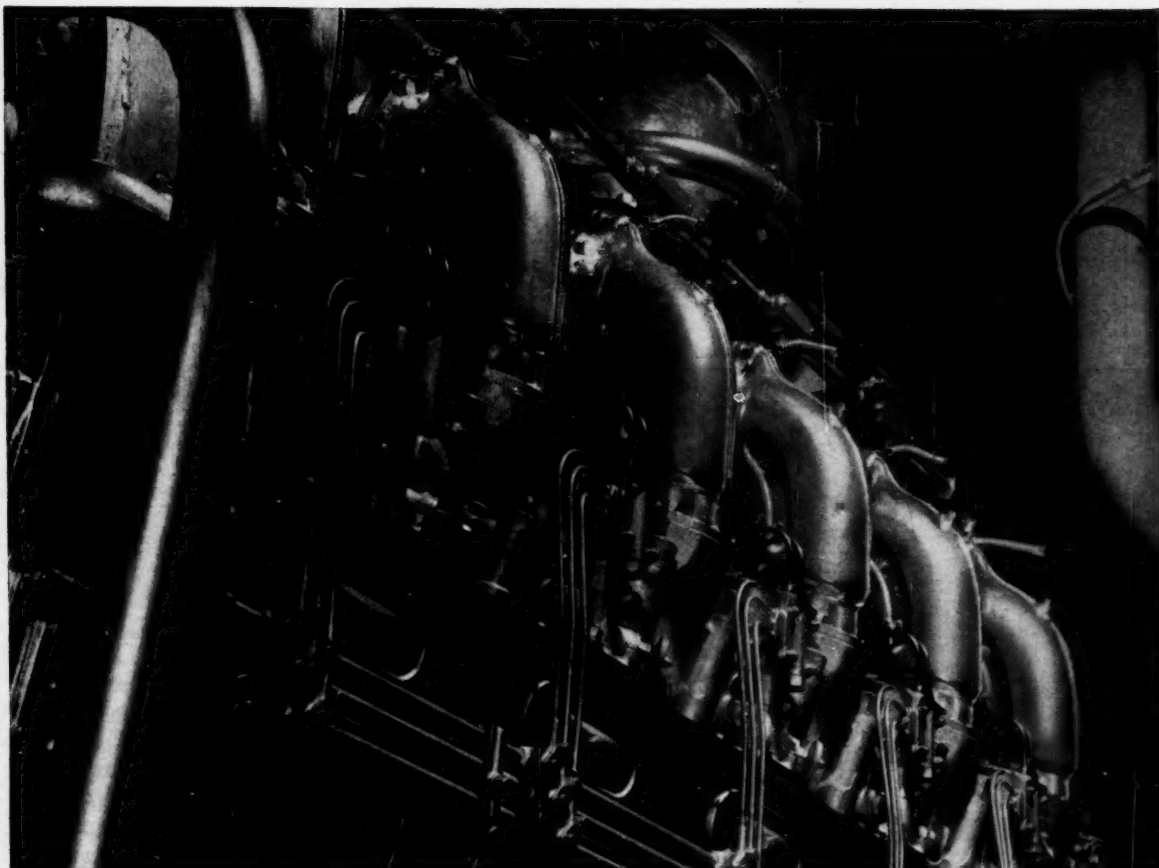
Wage increases for Du Pont and Union Carbide Workers in West Virginia's Kanawha Valley took effect this week:

- Carbide, with plants at South Charleston and Institute, boosted the pay of more than 10,000 workers as much as 15¢/hour, and added an eighth annual holiday, with increased pay for holiday hours worked.

- Du Pont's Belle works gave its 4,000 hourly employees a 10-15¢/hour pay hike.

Both firms gave workers similar wage increases last September.

Procter & Gamble's Neil McElroy may receive a U. S. Cabinet post, according to Washington observers. The 52-year-old P&G president is one of the half-dozen industrialists considered as good prospects to succeed Secretary of Defense Charles Wilson. Biggest hurdle for McElroy now seems to be a possible "conflict of interests"—a block that has ruled out several other businessmen.



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Potassium Chromate

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☐ Mutual literature on corrosion control in _____

Name _____ Position _____

Company _____

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August 10, 1957

Sales Go Up but Earnings Take a

	Sales 1st 6 mos. '57 (\$ million)	Change from 1st 6 mos. '56 (percent)	Net 1st 6 mos. '57 (\$ million)	Change from 1st 6 mos. '56 (percent)	Sales 2nd qtr. '57 (\$ million)	Change from 2nd qtr. '56 (percent)
Air Reduction	93.1	up 12.3	8.2	up 4.0	46.8	up 8.8
Allied Chemical	349.5	up 2.3	22.1	down 13.4	183.6	up 4.5
American Cyanamid	259.1	up 2.5	23.7	up 3.0 ⁽³⁾	127.0	up 1.5
American Potash	21.8	up 8.3	2.5	up 3.7	10.8	up 3.4
Atlas Powder	35.1	up 6.6	2.0	down 10.6	18.3	up 4.4
Catalin	12.2	up 5.0	0.2	up 29.6	6.0	up 1.6
Celanese	95.3	up 0.9	5.6	down 9.2	14.8	down 3.0
Commercial Solvents	29.4	up 0.3	1.2	down 26.4	14.8	down 3.0
Diamond Alkali	65.2	up 1.6	4.7	down 15.2	34.3	up 2.2
Dow ⁽⁷⁾	320.5	up 9.7	28.5	down 6.5	165.6	up 9.4
Du Pont ⁽⁶⁾	995.8	up 7.3	136.5	up 10.2	494.3	up 5.5
Food Machinery	165.0*	up 8.0	9.0*	unchanged	86.5*	up 1.4
General Aniline	67.9	up 7.2	2.3	down 15.9	35.4	up 10.6
Hercules Powder	124.8	up 3.6	8.7	down 10.6	63.9	up 1.3
Heyden Newport	25.1	up 5.3 ⁽⁵⁾	1.5	up 3.1 ⁽⁵⁾	12.5	up 4.5
Hooker ⁽⁷⁾	53.8	down 2.5	4.6	down 25.7 ⁽¹⁾	19.9	down 33.8
Interchemical	56.3	up 1.8	1.9	down 18.9	28.4	up 0.8
International Minerals	62.0*	up 4.8	4.9*	unchanged	32.5*	up 6.9
Koppers	151.9	up 2.1	4.9	down 40.2	79.9	down 0.4
Merck	91.3	up 4.9	11.7	up 14.0	46.3	up 6.5
Monsanto	297.1	up 6.0	22.2 ⁽²⁾	up 0.9	145.9	up 4.5
National Distillers	264.9	unchanged	10.2	up 1.1	118.4	down 14.4
National Starch	21.8	up 17.0	1.4	up 34.9	11.1	up 16.2
Olin Mathieson	288.9	down 7.1	19.7	down 8.8	153.4	down 1.5
Pennsalt Chemicals	40.8	down 9.9	2.0	down 9.8	21.7	down 9.2
Pfizer	98.5	up 12.9	10.0	up 4.9	47.8	up 10.1
Pittsburgh Coke ⁽⁸⁾	27.0*	down 20.8	11.7	down 16.0	13.3	down 31.6
Rayonier	60.0	down 17.3	3.9	down 51.4	30.0	down 19.3
Reichhold Chemicals	33.0	up 11.9	1.5 ⁽⁴⁾	up 54.2	17.7	up 17.2
Rohm & Haas	90.9	up 10.3	8.3	up 6.3	47.0	up 11.9
Stauffer	79.3	down 1.4	7.2	down 2.6	42.3	down 1.0
Texas Gulf Sulphur	37.0	down 17.0	11.0	down 25.5	19.2	down 16.1
Union Carbide	690.4	up 7.9	69.6	down 4.4	339.1	up 6.1
Victor	27.1	up 8.8	2.0	up 10.0	13.0	up 1.0
Wyandotte	40.2	up 8.0	2.2	up 2.4	20.7	up 7.9

(1) Figures include \$334,100 from sale of marketable securities during 1st qtr., 1956.

(2) Excludes income from domestic 50% owned companies.

(3) Figures exclude revenue from sale of Gloucester plant and stock of Chemical Construction Corp.

(4) Includes \$415,000 from sale of foreign securities.

(5) Adjusted for Newport merger.

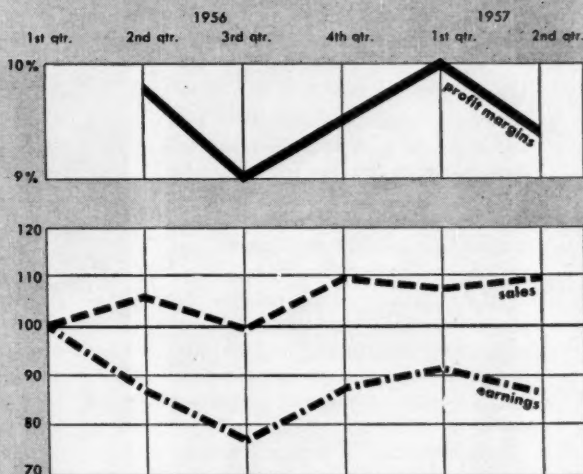
*CW estimate.

Disappointing Dip

Net qtr. '57 (million)	Change from 2nd qtr. '56 (percent)	Ratio, net to sales 1st 6 mos. '57 (percent)	Ratio, net to sales, 1st 6 mos. '56 (percent)
3.9	down 4.4	8.8	9.5
12.1	down 5.5	6.3	7.5
10.7	down 0.1	9.1	9.1
1.2	up 1.0	11.4	12.0
1.1	down 16.1	5.7	6.8
0.1	up 141.6	1.9	1.6
0.5	down 25.7	5.9	6.6
0.5	down 25.7	4.2	5.7
2.4	down 12.6	7.2	8.6
15.1	down 11.4	8.9	10.4
69.9	up 14.9	13.7	13.3
5.0*	down 3.5	5.5	5.9
1.4	up 13.9	3.3	4.1
4.6	down 11.1	7.0	8.1
0.7	down 7.3	6.0	6.2
2.4	down 29.7	8.5	11.2
1.1	down 13.3	3.4	4.2
1.8*	down 24.1	7.9*	8.3
3.0	down 11.2	3.3	4.7
5.9	up 26.4	12.9	11.8
10.6	down 0.8	7.5	7.8
5.2	up 1.8	3.9	3.8
0.7	up 37.1	6.5	5.6
9.7	down 15.6	6.8	7.2
0.9	down 26.5	4.8	5.8
4.6	down 8.4	10.2	11.0
0.7	down 34.3	6.1	5.8
1.9	down 55.6	6.5	11.0
0.9	up 92.2	4.5	3.3
4.2	up 16.8	9.1	9.4
4.0	up 0.2	9.0	9.1
5.4	down 28.2	29.7	11.4
34.1	down 2.8	10.1	33.0
0.9	down 4.5	7.4	7.4
1.3	up 9.0	5.5	5.8

- * Excludes General Motors.
- * Six months ended May 31.
- * '56 figures include income and sales of Great Lakes Steamship Co.

CW Earnings Index



Here's how the figures graphed above are computed.

Sales and Earnings: Sales of 25 carefully selected chemical companies are totaled for each quarter. Sales for the first quarter of 1956 is taken as the base figure and expressed as 100. All other quarters are assigned an index number related to this base. After-tax earnings are computed in the same way.

Profit Margins: The aggregate sales of the same 25 companies are divided by their aggregate after-tax incomes and the resulting decimal expressed as a percentage. An average of the individual profit margins would not be statistically meaningful.

No adjustments are made for seasonal changes.

S ECOND-QUARTER earnings tabulated this week in *CW's* quarterly survey are down from the first quarter; and—despite increased sales—profit margins continue their decline.

But even though the earnings of a majority of companies surveyed are down from the comparable second-quarter and first-half periods of 1956, most managements are looking toward a better second half. Underlying their optimism is brisk demand on several fronts—notably synthetic fibers, industrial gases, rubber and steel—coupled with rising prices of profit-squeezed items.

Total sales of chemicals and allied products may well reach \$26 billion for '57—an 8% gain over '56. The outlook is brightened by the absence of crippling strikes. With the strong exception of plastics, fertilizers and coal-tar chemicals, most products have been in good demand.

The Figures: The average profit margin again dipped, this time to 9.37%—0.47% below the '56 second-quarter figure and 0.63% off the '57 first quarter (see above).

Aggregate earnings for the second quarter were off 1.7% from last year's quarter, but sales continued their climb, pushing 2.8% over the '56 second quarter. Of the 35 companies surveyed, 25 reported earnings lower than those of the second quarter of '56—and 18 are under their corresponding '56 six-month totals.

Cited by many companies as a contributor to the poor profit-margin showing during the first half is a change in bookkeeping. In many instances, special outlays for expansion programs are charged to income rather than capitalized. And with a record number of new plants coming on-stream, startup costs are high.

Higher hourly wage rates — up about 5% from last year's—are another factor contributing to poor profit margins; chemical prices have risen but one-third of material and other costs.

Standouts: But a number of companies registered strong changes from reports of previous quarters. Du Pont, for example, chalked up a healthy 15% increase in net earnings, substantially over the first quarter's 5% rise and a complete reversal of the 13% decline for the '56 full year.

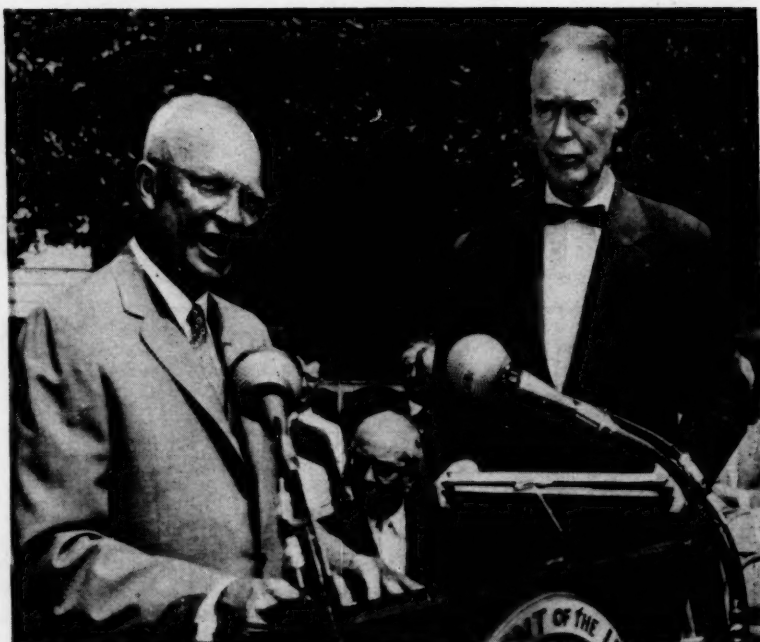
General Aniline & Film suffered a 16% drop in aggregate six-month earnings, but showed a 14% gain for the second quarter. Probably the most notably poor showing was by Koppers, which registered a drop of 40% in earnings over the like quarter of '56. The company has experienced startup difficulties with its polyethylene plant, has also suffered from severe styrene price cuts.

But despite the declines, most companies are looking ahead with optimism.

For example, National Distillers' President John Bierwirth, says several new plants about to come onstream would substantially boost his company's income during the final half. Bierwirth refers to Distillers' new zirconium plant at Ashtabula, O., set to go onstream this month, its USI isobutic acid plant at Tuscola, Ill., which will be ready in September, and its new titanium plant, at Ashtabula, also scheduled for completion before the end of 1957.

Perhaps typical of many comments is that of Atlas Powder President Ralph Gottshall (who informed stockholders of an 11% earnings dip): "While earnings may not equal last year's record figures, we don't expect a significant decline."

Thus, though second-quarter earnings are somewhat discouraging, they're not causing alarm; and although '57 figures probably won't match last year's, they'll still be comfortably close to recent highs.



Eisenhower, Strauss (center), Herter: For the peaceful atom, a treaty.

Atom Power Breeds a Split

Two major atomic developments—one with international impact, the other aimed to accelerate development of a more vigorous domestic program—came to a head last week.

The first was President Eisenhower's signing of the treaty of the International Atomic Energy Agency. Washington is hailing it as the biggest step so far toward world cooperation on peaceful uses of the atom.

The second was a double-barreled blast at the Atomic Energy Commission by Democrats on the Congressional Joint Committee on Atomic Energy. The committee, registering its strongest dissatisfaction with domestic development of the struggling atomic program for power development, in effect moved to seize control of the direction of the program (*CW*, Aug. 3, p. 21). Its bill favors a predominantly public-developed power program—much against AEC's counsel.

The Democrats say they are out of patience with the Strauss-run AEC, asserting that AEC is jeopardizing the nation's atomic leadership. They are moving to impose legislative leadership.

Rep. Chet Holifield (D., Calif.)

sums up their claims: "If the prestige of the U. S. is to be regained in atomic power development, AEC will accept this program and get on with the job. If it opposes, we will continue to drop behind in development of large reactors."

The big question about the International Atomic Energy Agency, the concept of which was first represented by Eisenhower in a 1953 speech, is how effective the agency may prove to be—or, more precisely, how effective Congress will want it to be.

Potentially, the agency can play a major role in reducing cold-war tensions, in spurring international development of commercial nuclear power, and in opening world markets for U. S. atomic equipment—a vista of broad, long-term significance to U. S. equipment manufacturers.

But the outlook is clouded by the current Congressional battle over a proposal to require Congress's approval of each U. S. transfer of enriched uranium to the agency. And a struggle is developing between the State Dept. and AEC over which is to control U. S. policy concerning the agency. The arguments could weaken the vigor of U. S. participation.

New Antidumping Skirmish

The long-smoldering controversy over revision of the antidumping act of 1921 was revived last week in sharply worded hearings before the House Ways & Means Committee. Subject: a Treasury Dept. sponsored bill calling for minor technical amendments to the act.

The chemical industry was more heavily represented at last week's hearings than any other industry, reflecting its traditional fears of cut-throat dumping by foreign competitors. Pending antidumping action against rayon-staple fiber imports, in particular, is being closely watched.

The Treasury Dept. is expected to deliver its rayon-fiber findings to the Tariff Commission within the next week or so. The latter will determine whether the U.S. industry has been injured by imports. If the verdict is yes, Treasury will impose antidumping duties on rayon staple fiber imports.

The Manufacturing Chemists' Assn. and Synthetic Organic Chemicals Manufacturers Assn. were represented by Richard F. Hansen, an official of both organizations. Kenneth C. Royall spoke for the Rayon Staple Fiber Producers Assn. Archie Albright, assistant to the president of Stauffer Chemical Co., testified for his company, and representatives of the potash industry were also heard. They reiterated the stand taken by the New York Board of Trade last week (*CW Market Newsletter*, Aug. 3).

The key point made by industry spokesmen was that injury to members of an industry within a limited geographical region should be grounds for imposition of antidumping duties, even if the industry as a whole were not significantly affected.

The bill proposed by the Treasury, which deliberately sought to evade the main controversial issues, was heavily criticized by protectionists, importers and members of the committee during the hearings. Although its technical provisions on balance probably would lead to more antidumping investigations and more findings of dumping, they did not go far enough to satisfy those who are pressing for a tougher antidumping law.

Importers opposed the bill on grounds that it would increase the

costly delays involved in getting decisions as to whether or not dumping has taken place and that it would also increase importers' uncertainty as to whether they're liable to dumping charges. Both sides criticized the failure of the bill to provide for open investigations and hearings and for judicial review of antidumping cases.

The two main points at issue in the continuing struggle over the antidumping law will be these:

(1) Whether the phrase "fair value" of imported goods—the price below which they can't be sold without incurring antidumping penalties—should be more loosely defined.

(2) Whether a domestic concern must prove injury from dumping before antidumping action can be taken. Protectionists contend that since dumping is an unfair business practice, it should be punished whether it results in injury or not.

There is no chance of final Congressional action this year.

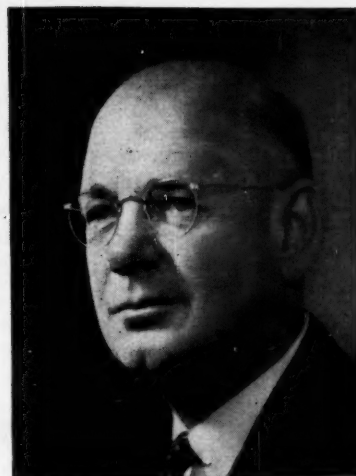
Satellites Up Exports

Results of Russia's program to coordinate chemical production among its satellites were registered last week in a report from the German Institute for Economic research in Cologne.

One is a predicted increase in chemical exports from eastern European satellites to Western nations. This has come about inadvertently, however, stemming from revolts in Hungary and Poland that forced a cutback of investment in new plants in those nations. Consequently, materials that new plants would have taken from the other satellites have become excess production, and will have to be exported.

Details of the coordination plans are scarce, but it is known that the program calls for a substantial degree of specialization in each of the countries. Finished industrial chemicals will be turned out in East Germany and Poland, while the Southeastern countries will concentrate on raw and semifinished products.

East Germany will develop its brown-coal chemistry, Poland will make hard-coal chemical products, and Czechoslovakia will put the bulk of its research into pharmaceutical and tar dyestuffs fields.



Columbia's Young: He's still looking for a petrochemical partner.

Joint Venture Off

Commercial Solvents and Columbia Gas System last week called off plans for a joint venture to produce ethylene and other hydrocarbon derivatives.

And at the same time, George Young, Columbia president, said his company would go ahead with its own plans to put \$13 million into extraction and fractionation facilities in West Virginia and Kentucky.

CSC told *CW* it had withdrawn from the venture because it was not economically feasible, and cited the increased costs of construction as a factor entering into the decision. CSC would have contributed technical know-how and marketing organization to the joint setup.

Now, Columbia Gas will go ahead with the portion of development it was going to undertake under the original setup, and (according to officials of United Fuel Gas, a Columbia subsidiary) is "still shopping for a partner" for further development. Columbia has optioned an additional 400 acres next to its fractionating site near Siloam, Ky.—the same site, incidentally, that had been optioned for the CSC-Columbia joint venture—for "additional plant space to provide for future major petrochemical development."

Columbia hopes to have the \$8-million extraction plant and the \$5-million fractionation plant in operation by Dec. '58 or, at the latest, by '59.

COMPANIES

North American Ore Products Corp. is the name of a newly formed company that will mine silica, iron ore and other minerals at Stanley, Va. North American Contracting Corp. controls 51% of the voting stock in the new firm. The rest is held by National Mining and Engineering Co. (Washington and Santiago, Chile). Assets of the company include 2,000 acres valued at about \$2.5 million. Mineral deposits on the property are valued at about \$200 million.

Tracerlab Inc. has formed a new European subsidiary, Tracerlab (Holland) N. V. Headquartered in Amsterdam, the new firm handles most of the products produced by the parent firm and will be operated as a wholly owned subsidiary.

Vick Chemical Co. directors have approved a five-for-four split of the company's common stock. The plan calls for one new share to be issued for each four shares outstanding. Stockholders will be asked to approve at the annual meeting on Oct. 15.

Milton Roy Co., Philadelphia engineering firm, has acquired Anders-Lykens Co. (Lykens, Pa.), makers of instrument air dryers and gas dehydrators. Anders-Lykens will continue operating as a division of Milton Roy. Terms of the merger were not revealed.

EXPANSION

Sodium Chlorate: Standard Chemical Co., Ltd. (Montreal), a subsidiary of Columbia-Southern Chemical Corp., will add a multimillion-dollar sodium chlorate unit to its Beauharnois, Que., complex. Output will go chiefly to the Canadian pulp and paper industry.

Benzene: Gulf Oil Corp. will start producing benzene on completion of a new 30-million-gal./year benzene plant at its Port Arthur, Tex., refinery. Construction is slated to get under way this summer, with production scheduled to start late in 1958.

Copper: Eastern Mining & Smelting Ltd., Canadian metallurgical firm, plans to build a \$22-million copper refinery in Chicoutimi, Que., to smelt nickel and copper concentrates.

Cement: California Portland Cement Co. has added three new kilns to its plant near Mojave, Calif., bringing the plant's capacity up to 70,000 sacks/day of cement.

Pulp & Paper: Alberta West Forest Products Corp., Ltd., Canadian pulp and paper producer, will build a multimillion-dollar pulp mill in the Whitecourt dis-

trict, 110 miles northwest of Edmonton, Alta. The site is near the Athabasca River, adjacent to extensive timber resources the company is negotiating to acquire. Cost and production figures were not revealed.

Uranium: Globe Mining Co. and Union Carbide Nuclear are planning to build a \$7-million mill in the Gas Hills area (near Casper, Wyo.) to process 1,000 tons/day of uranium. Globe owns more than 1 million tons of uranium ore reserves in the district, and Union Carbide Nuclear also has substantial ore bodies nearby. A formal application to AEC for the mill has not yet been filed.

Cesium: Montgary Explorations Inc. (Toronto, Can.) has discovered significant deposits of cesium in its spodumene ore body now being developed at Bernic Lake, Man. More than 27,000 ft. of cores originally drilled by Montgary to determine the extent of lithium deposits are being rechecked for cesium. Polucite, one of the ores of cesium, has already been found in five of the cores—one of them showing cesium deposits at a depth of 20 ft. At present, no cesium is being produced in North America; most of it is imported from Africa.

FOREIGN

Perlon/Hungary: Hungary is adding a perlon drawn-thread section to its viscose works at Nyergesufalu. The new facility will produce 300 tons/year of thread, is expected to be in production in mid-1958.

Hungary also announced that a 200-lbs./day polyethylene plant, not identified, was nearing completion.

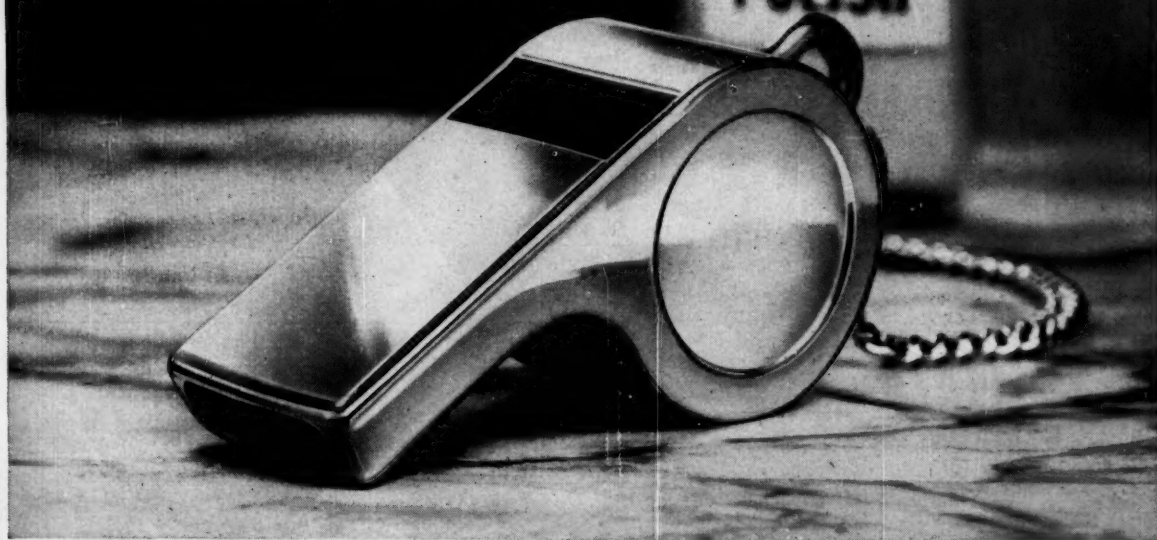
Sulfuric Acid/Australia: The first Australian plant to produce sulfuric acid from oil refinery gases will be built at Geelong, near Melbourne, by Shell Refining (Aust.) Pty. Ltd. The \$1.2-million plant will produce 100 tons/day of sulfuric acid after startup late in 1958.

Acetic Acid/Philippines: The Far East Corp. will build a \$125,000, 1,000-kilos/day glacial acetic acid plant in the Philippines, to be in operation by Dec. 1. It is designed to allow expansion to 2,000 kilos/day.

Petrochemicals/France: Societe des Produits Chimiques D'Aquitaine is planning to construct a number of plants in southwest France to make acetylene methanol and ammonia from natural gas supplies abundant in the area.

Phenol/Brazil: Quimbrasil, Quimica Industrial Brasileira S.A., Brazilian chemical firm, will build a 3,600-tons/year phenol plant near Rio de Janeiro.

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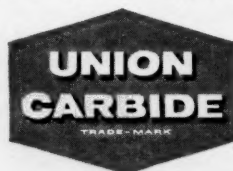


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SILICONES

Washington Newsletter

CHEMICAL WEEK
August 10, 1957

Government contractors who practice racial discrimination will face new action at the hands of the Eisenhower Administration.

The government contract compliance committee—most commonly known as the “Nixon Committee” after its chairman, Vice-President Richard M. Nixon—is undertaking a study of hiring and promotion policies among 500 federal contractors in cities where the population includes at least 50,000 Negroes. The aim: to get, for the first time, a complete picture of employment practices and find violations ahead of complaints.

Nixon is going after employers who practice discrimination among workers because of race, color or creed. He is pushing all federal agencies to end contracts with firms that violate antidiscrimination clauses in their contracts. And beyond that, he is urging that no initial contracts be made with firms that have a history of following discriminatory employment practices.

The Nixon Committee's negotiations with major employers in key industries are continuing. In oil and petrochemicals, for example, committee members are now talking with Sinclair, Esso Standard Oil, Shell and others. Shell and Esso, at their Houston and Baton Rouge plants, have combined formerly separate white and Negro promotion and seniority rosters into single lists.

Another item for negotiation: some 50 important firms are being urged to adopt an emblem—similar to the union “bug” used in the printing industry—for use in the advertising of job opportunities. A dozen have agreed; many more are expected to follow. The emblem says: “equal job opportunity for all qualified applicants.”

The White House is shifting its alien property approach, but it's too early yet to tell what the new line is going to be.

Last week's official announcement that the Administration now proposes to make a “more equitable return” to former owners is vague enough to allow plenty of room for speculation and plenty of time for the White House to work out terms. Details will be presented to Congress at the next session that begins next January.

The advance word, even though vague, serves two purposes. First, since it comes ahead of September's German elections and offers the hope of a larger cash return to German citizens who formerly owned vested property, it constitutes a bit of political aid for the Adenauer government. Second, it makes clear that Washington intends to go ahead, as fast as is legally possible, with the sale of the remaining seized assets, including General Aniline & Film (the biggest remaining property).

The White House announcement indicates strongly that the Administration is softening its current position—that cash returns be made

Washington

Newsletter

(Continued)

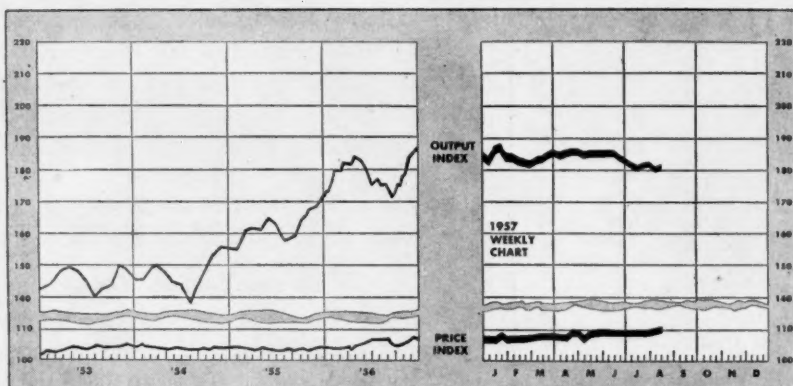
only to individuals from whom property was seized and should be limited to a maximum of \$10,000.

But there is no official guidance or speculation available as yet to indicate whether the Administration will merely recommend a boost in this individual ceiling or whether it will also advocate some cash return to former owners functioning as corporate entities. Up to now, the Administration has opposed any corporate reimbursement.

And Congress, too, will have its say on alien property return.

Though some members of the Senate Judiciary Committee have advocated a return program more generous than has the Administration, influential members of the House Commerce Committee have consistently opposed all moves to liberalize the current alien property law—which allows no return whatever.

New federal controls over synthetic narcotic producers will be voted next year. The House Ways & Means Committee is this week scheduled to report out a "clean" version of a control bill—including the changes in procedures hammered out in a series of meetings between drug industry and Treasury Dept. lawyers. The agreement makes clear the makers' right to administrative hearings, court appeal on government action to license producers and to set annual output quotas for each firm. The agreement paves the way for final House and Senate approval next year.




Business Indicators

WEEKLY

	Latest Week	Preceding Week	Year Ago
Chemical Week output index (1947-49=100)	181.0	180.5	174.0
Chemical Week wholesale price index (1947=100)	110.5	110.5	105.6
Stock price index of 11 chemical companies (Standard & Poor's Corp.)	46.04	46.82	49.96

MONTHLY

Foreign Trade (million dollars)	Exports			Imports		
	Latest Month	Preceding Month	Year Ago	Latest Month	Preceding Month	Year Ago
Chemicals, total	134.1	124.2	106.8	24.7	25.2	22.6
Coal-tar products	10.2	6.9	6.0	5.5	4.8	4.2
Industrial chemicals	21.7	20.5	15.4	7.6	6.9	8.0



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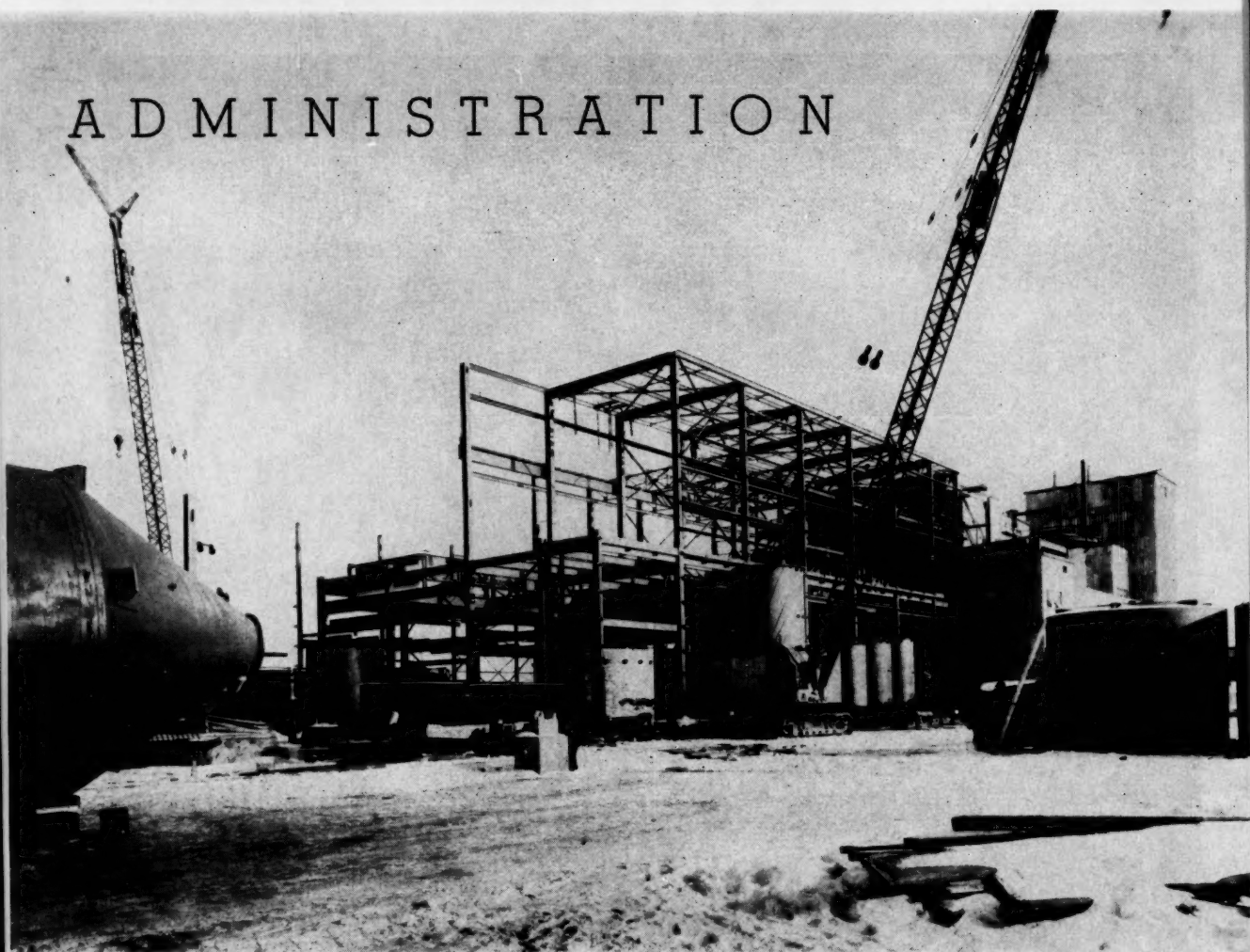
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PETROLEUM SOLVENTS

ADMINISTRATION



New plant of Canadian Titanium Pigments Ltd. is one of many construction projects setting a . . .

New High in Canadian Capital Spending

Despite a money shortage, rising construction costs and a profit squeeze, Canada's chemicals-and-allied-products industry this year is expected to set a new record in total capital and repair expenditures. That's the picture that emerges this week from a just-completed CW survey of Canadian firms.

This record capital spending—coupled with the new Conservative government's announced policy of "Canada for Canadians" (*CW*, July 20, p. 47)—is expected to result in a gradual lessening of the important role now played by U.S. chemical exports in Canada's economy. U.S. chemical exports to Canada totaled more than \$250 million last year.

New Construction Off: As the bar graph (p. 32) indicates, capital and re-

pair expenditures for '57 are expected to register a substantial increase over the previous two years. This year's spending is expected to be 11.5% higher than the estimate for '56.

But a breakdown indicates that spending will include about \$2 million less for new construction and \$17.5 million more for machinery and equipment than last year. Repair expenditures this year are expected to top last year's outlay by \$3.1 million.

The survey indicates that some 20 companies will account for about 80% of the total capital and repair expenditures.

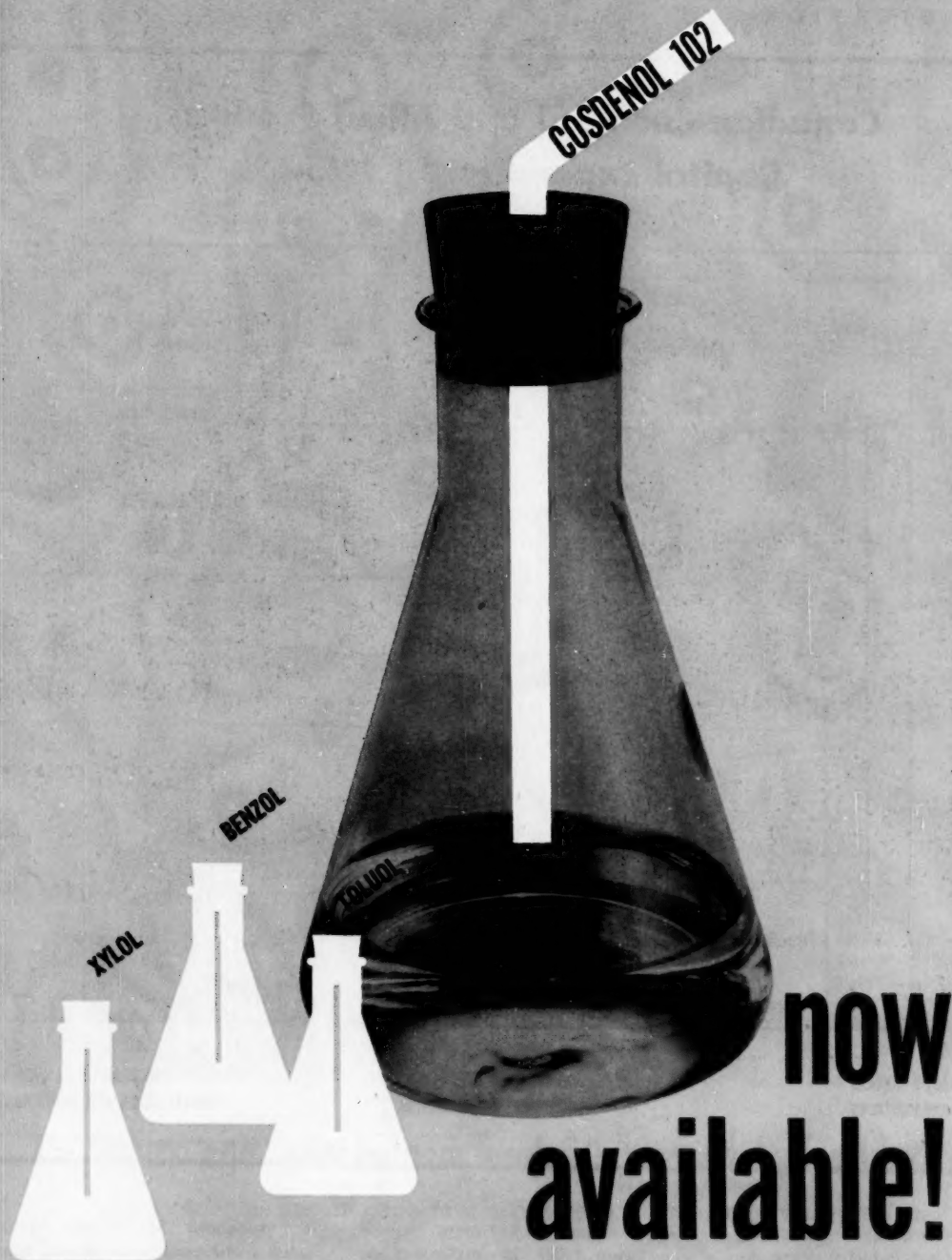
Financing from Within: Although Canadian firms surveyed revealed their over-all expenditure plans freely, nearly all were reluctant to divulge details about sources of funds to finance the record costs. Still, several

organizations were willing to indicate that—like their counterparts to the south—they intend to get most of the money from internal sources.

"We expect to raise entirely from internal sources about \$750,000 to finance capital expenditures," said one firm's secretary.

"It's almost wholly coming from our own coffers," said the controller of another big company.

But questions about financing almost always brought replies like, "It is not the policy of this company to divulge information of this type," or, "We cannot file a detailed reply of this kind." And from several: "We are not at liberty here to supply the information, since we are the subsidiary of a U.S. firm." It should be pointed out that the expansion financing of many of the Canadian sub-



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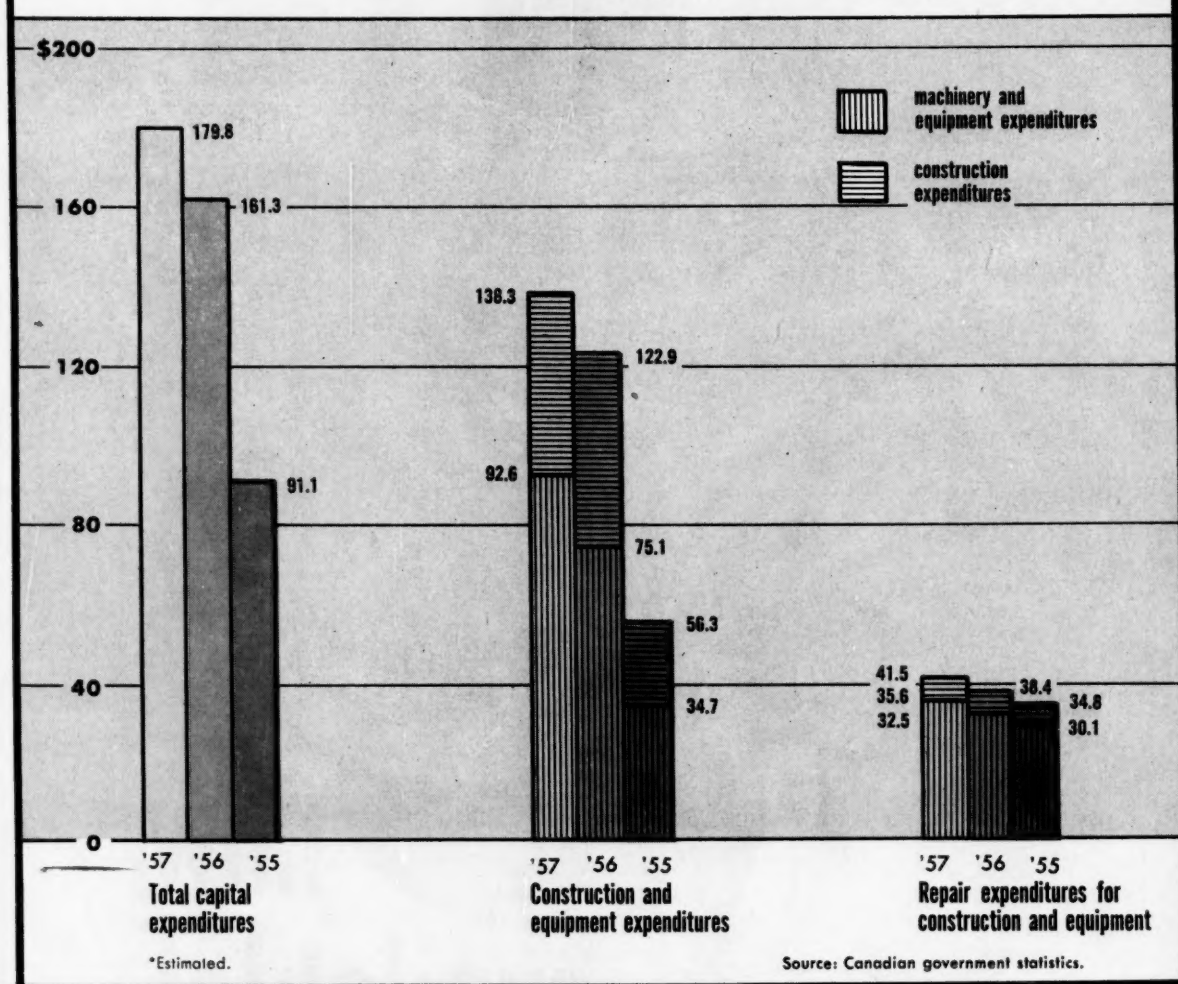
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Canadian Chemical and Allied Products, Capital Expenditures, 1955-57

(million dollars)



sidiaries was covered in the survey of U.S. chemical industry plans for 1957 (*CW*, March 30, p. 16).

Three Factors: Three main factors are behind Canada's record capital and repair expenditures, factors that should provide fuel for Canada's industrial boom for several years. They are: (1) an over-all trade deficit, (2) rapid acceleration in the demand for capital goods, (3) the new government's desire to promote the development of Canada for, and by, Canadians.

Even under former Prime Minister

Louis St. Laurent's Liberal regime, steps were taken to implement development of Canada by Canadians. One example: preparation of an amendment to the U.S.-Canadian Tax Convention that would encourage greater private Canadian participation—in the form of equity stock purchases—in native industry. In addition, Prime Minister John Diefenbaker has announced his intention to work for a revamping of the Canadian income-tax law in order to eliminate the discriminatory method of taxing some Canadian companies.

Throughout '56, Canada accumulated a chemical trade deficit, mostly with the U.S., of \$60 million. Chemical exports totaled \$228.6—up 8.9% from 1955—but chemical imports increased 10.8% over the '55 figure, to \$288.6 million.

Trade with the United Kingdom—with which Diefenbaker intends to strengthen Canada's ties, possibly at the expense of trade with the "uncertain" American market—remained unfavorable for Canada during the first quarter of this year. Exports reached \$215.9 million, compared



1½ hours ago, she helped load 50 tons of hydrochloric acid

(Dow teletype operator speeds service through advanced communications)

10:30 A.M. and the teletypewriter continued to click rhythmically. An operator in our Chicago sales office was typing an order, while one of our Midland, Michigan, operators simultaneously received it. "Ship 10,000 gallons of hydrochloric acid from the Freeport, Texas, plant and deliver in Fort Worth."

With this, an advanced communication system hit high gear. At the same time that our operator relayed the request from here at our Midland, Michigan, office—Freeport received it

and began loading. Midland is the hub of our teletype operations through which all orders pass. So, regardless of a customer's location, his order is transmitted to the shipping point nearest him in a matter of minutes. Often, a load is on its way the very same day!

It's one more way that Dow speeds service to customers . . . and is part of a forward-looking plan that gears present communications and distribution to tomorrow's chemical needs. THE DOW CHEMICAL COMPANY, Midland, Michigan.

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ADMINISTRATION

with \$246.5 million for the same period last year. Imports from UK areas rose to \$165.8 million, from \$147.8 million during the first four months of '56.

Production Increases: Canada's chemical expansion is reflected in increased chemical production. Output of compressed gases, for example, increased in factory value of shipments by 26.2% last year over '55. For medicines and pharmaceutical preparations, the increase was 12.8%. Similarly, value of shipments of heavy chemicals rose by 11.8%; primary plastics, 10.1%; paints, 8.3%; soaps, 9.2%; miscellaneous chemicals, 7.3%; inks, 7.1%; adhesives, 7.8%; polishes, 4.6%; toilet preparations, 3.4% and coal-tar distillation products, 0.9%.

Only fertilizers and vegetable oils registered decreases in factory value of shipments in '56, dropping 10.5% and 15.7%, respectively.

Reports this year indicate another good year for the industry. Sales for the first quarter were \$286 million, compared with \$267 million during the same period last year. Like U.S. chemical firms, however, Canadian companies feel the profit squeeze. Net earnings for the first quarter were \$31 million, down \$2 million from last year's initial quarter. Profits before taxes were off \$3 million at \$20 million, and net profits totaled \$12 million for the first four months—a drop of \$2 million.

For U.S. chemical management men, expanding Canadian chemical industry can be another source of headaches. Already anxious over changes that may result from the new government's policies, U.S. businessmen must also look to the day when a booming Canadian industry may cut into their chemical exports—or even come into competition for a larger share of the U.S. market.

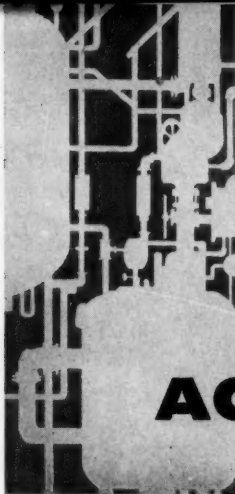
But for now, Canada needs both capital and goods from the U.S., and changing this situation will take considerable time. Even Diefenbaker's policy changes are certain to come about gradually.

For the long range, however, with steadily expanding Canadian chemical industry and a Canadian government dedicated to promoting Commonwealth ties, Canada for Canadians could add up to a new challenge for U.S. chemical process management.

Major Canadian Chemical Industry Projects to Be Completed in 1957

Company	Location	Type of Plant	Cost (million dollars)
ONTARIO			
Bicroft Uranium Mines	Bancroft	uranium concentrates	\$9.0
Brunner Mond	Amherstburg	soda ash	n.a.*
Canadian Industries	Toronto	paint and varnish	1.5
Canadian Oil	Sarnia	reformed naphtha, benzene, toluene, xylene	3.0
Cornwall Chemicals	Cornwall	carbon bisulfide, carbon tetrachloride	1.5
Dryden Paper	Dryden	bleached and unbleached sulfate pulps	12.0
Du Pont	Maitland	Orlon acrylic fiber	8.0
	North Bay	commercial explosives	7.0
Electric Reduction	Hamilton	processing phosphorus into chemicals, wet process acid	5.0
Goodrich	Niagara Falls	Geon polyvinyl plastics	3.5
Imperial Oil	Sarnia	petrochemicals	25.0
		detergent alkylate	3.8
International Nickel	Copper Cliff	sulfuric acid	3.3
		ore concentrates	12.5
Linde Air Products	Welland	oxygen, argon	n.a.
Noranda Mines	Cutler	liquid aluminum sulfate, sulfuric acid	8.0
QUEBEC			
B. A. Shawinigan	Montreal East	phenol acetone (50% increase)	n.a.
Canadian Titanium Pigments	Varenes	titanium	15.0
Carbide Chemicals	Montreal	polyethylene resin, ethylene glycol	n.a.
Davison Chemical	Valleyfield	synthetic fluid cracking catalyst	6.0
Linde Air Products	Montreal	acetylene	n.a.
	Seven Islands	oxygen, acetylene	n.a.
National Silicates	Valleyfield	soluble silicates	n.a.
Nichols Chemical	Valleyfield	anhydrous hydrofluoric acid, sulfuric acid	n.a.
Shell Oil	Montreal East	detergent alkylate, gasoline alkylate	3.0
NORTHWEST TERRITORY			
Ravrock Mines	Yellowknife	high-grade uranium concentrates	3.5
BRITISH COLUMBIA			
Alaska Pine and Cellulose	Port Alice	bleached sulfite pulp	12.0
Aluminum Co. of Canada	Kitimat	aluminum (scheduled for '59)	250.0
B.C. Forest Products	Crofton, Vancouver Is.	bleached sulfate pulp	38.0
Electric Reduction	North Vancouver	sodium chlorate	5.0
Hooker Chemicals	North Vancouver	chlorine, caustic soda	12.0
Jefferson Lake Sulphur	Fort St John	sulfur	1.8
La Farge Cement	Richmond	portland cement	13.0
MacMillan & Bloedel	Port Alberni	sulfate pulp	65.0
Powell River	Powell River	Powell River pulp	20.0
ALBERTA			
North Western Pulp & Paper	Hinton	kraft pulp	50.0
SASKATCHEWAN			
Eldorado Mining & Refining	Beaverlodge	uranium concentrates	13.5
Lorado Uranium Mines	Beaverlodge	uranium, sulfuric acid	9.0
Western Potash	Unity	potash	10.0

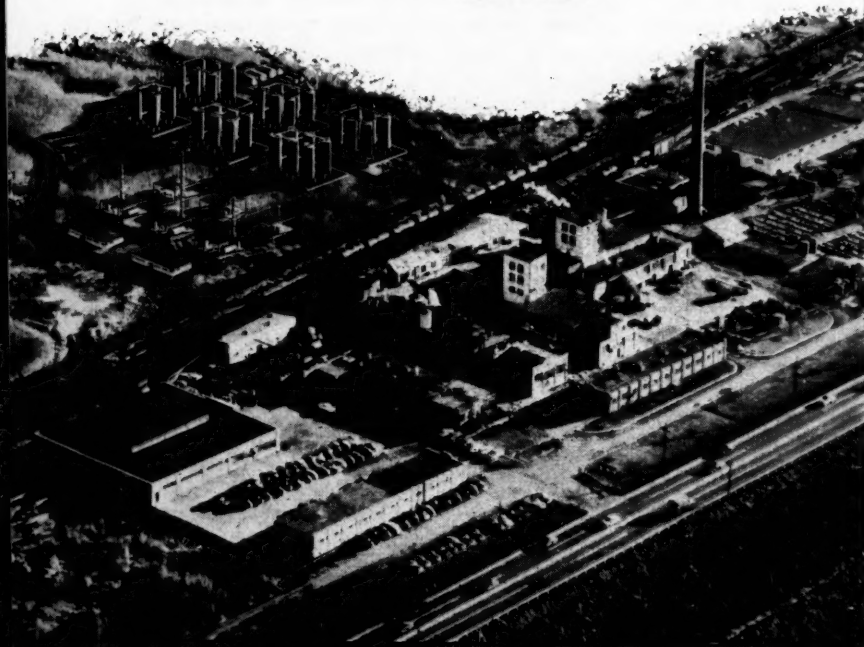
*not available.



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ADMINISTRATION



18-plant group is sounding board for new pension-insurance plan.

LABOR

Big Benefits Bargaining: Latest trends in chemical industry pension and insurance plans are exemplified in the recently disclosed details of American Cyanamid's new employee benefit program. The program was established following discussions with a massive bargaining committee representing local unions at 18 plants (*CW Business Newsletter*, April 27). Features include:

- Major medical expense insurance (\$100 "corridor" plan) incorporated into group hospital-medical-surgical coverage; employees' contributions reduced.
- Maximum weekly payment under sickness and accident clause increased to \$74, instead of \$50.
- Vested right in pension benefits at age 50, instead of 55; and the retiring employee may elect to receive reduced pension payments, with the widow to receive unpaid balance (up to 120 monthly payments) after the retiree's death.
- Dependents' hospital, medical and surgical benefits to continue six months after employee's death.

Twin Contracts: Last March, employees of Wyandotte Chemicals' Michigan Alkali Division bolted District 50, United Mine Workers, and switched to Oil, Chemical & Atomic Workers (AFL-CIO); employees of the company's J. B. Ford Division—also at Wyandotte, Mich.—stayed in District 50. Now—after separate negotiations—the two groups have new agreements that are virtually identical.

Principal terms:

- 12½¢/hour wage increase now,

additional 8¢ increase next spring.

- Cost-of-living escalator clause, with quarterly adjustments.
- Higher shift premiums, monthly pension payments to be based on \$2.25 (instead of \$1.50) for each year of service, and other holiday, vacation, insurance and fringe benefit improvements.

LEGAL

One-a-Day Trademark Suit: Republic Drug Co. (Buffalo, N.Y.) has been ordered by Federal Judge Justin Morgan, U. S. district court (Buffalo), to surrender all its labels and packages bearing the words "One-a-Day." The order is part of a permanent injunction against the firm, resulting from a trademark infringement suit brought by Miles Laboratories (Elkhart, Ind.).

Judge Morgan ruled the Buffalo firm infringed on Miles' trademark by labeling its Super Hist cold tablets "One-a-Day." Miles manufactures One-a-Day vitamin capsules.

Republic was assessed costs of the suit and is prohibited from using the Miles trademark, but profits made through illegal use of the trademark, as well as other damages, were waived by Miles.

Du Pont Karmex Victory: Du Pont's civil suit against Metol Co. (New York); its president, Alberto Nahmad; and Harvey Bernes, doing business as Bernes Sales Co. (New York); charging infringement of the Du Pont trademark Karmex, has resulted in a permanent injunction against Metol.

The action was taken in a consent decree signed by Federal Judge Ar-

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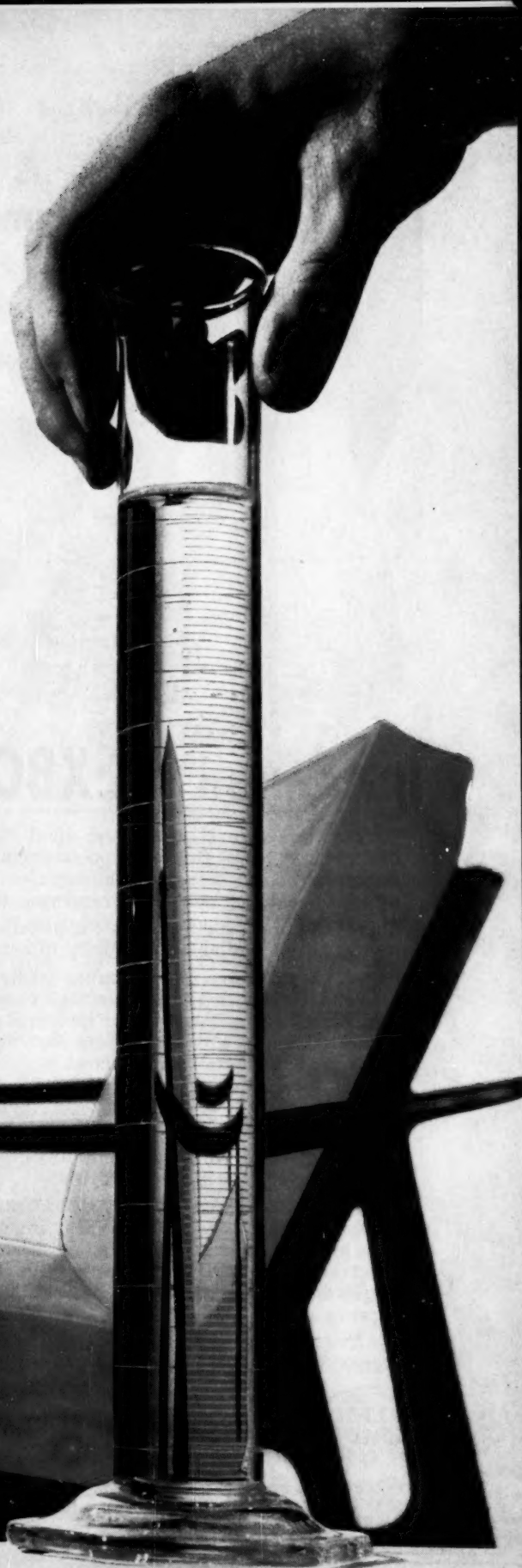
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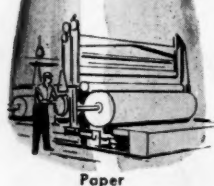


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ADMINISTRATION

chie Dawson, U.S. district court (New York).

Du Pont charged that the defendants labeled granulated superphosphates with the trademark Karmex for sale in foreign countries without Du Pont's consent and falsely represented the products to be manufactured by Du Pont.

Karmex is the registered trademark for Du Pont's substituted-urea herbicides.

KEY CHANGES

Francis J. O'Connell, to assistant to the vice-president; and **Edward J. Elliot**, to director of industrial relations; Allied Chemical & Dye Corp.

Cledo Brunetti, to executive assistant to the executive vice-president and manager, Ordnance Division (San Jose, Calif.), Food Machinery and Chemical Corp.

Paul S. Peterson, to executive vice-president, DeMert & Dougherty (Chicago), chemical manufacturers.

Donald Roon, to president, Houghton Laboratories (Olean, N.Y.).

Walter E. Greer, Jr., to director, United States Testing Co. (Hoboken, N.J.).

Morris A. Rosen, to board chairman; **Robert J. Milano**, to president and chief executive officer; and **Jerome F. McGinty**, to treasurer; Mantrose Corp. (Brooklyn, N.Y.), shellac bleachers.

Sam Gurley, Jr., to vice-president of sales, Olin Aluminum, Olin Mathieson Chemical Corp.

R. S. Abrams, to general manager, Silicoes Division, Union Carbide Corp.

T. Walter Hardy, to board chairman; **T. Walter Hardy, Jr.**, to president; **Lewis T. Hardy**, to executive vice-president; and **John T. MacLennan**, to secretary; Hardy Salt Co. (St. Louis, Mo.).

Jacques A. Mitchell, Jr., to treasurer; and **Laurence C. Ehrhardt**, to secretary; McKesson & Robbins (New York).

RETIRED

Harold R. Peters, secretary and treasurer, McKesson & Robbins.



*Which wheel is
most important?*

Some folks might say the big wheel is the most important. It's the wheel that powers and steers.

But what good would it be without the right rear wheel?

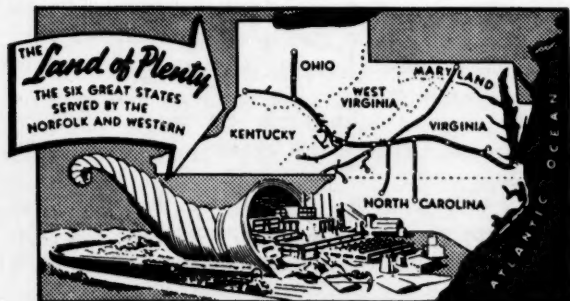
Well, then, perhaps the right rear wheel is most important. But of course not! How could you get along without the left rear wheel?

Plant operating requirements, as controllable by location, are pretty much the same. Whatever you need, *you need it all*. Sometimes manufacturers sacrifice one plant location advantage in order to gain others — but that's not the complete answer.

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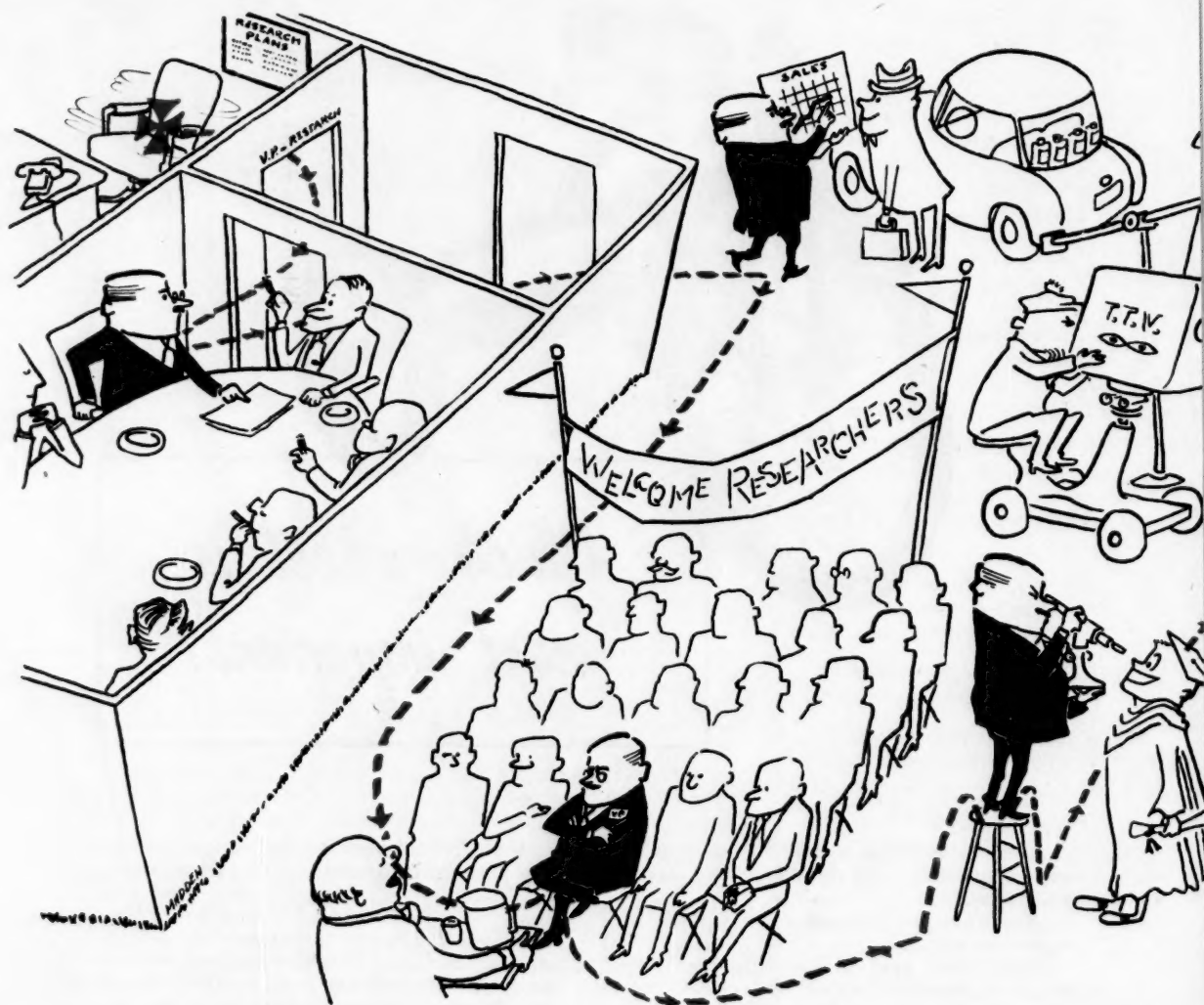
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RESEARCH



Nonresearch Duties Keep Research

Unlike his counterpart of 50 years ago, today's research director spends less and less time in the actual direction of research and more and more time in general administration and a host of extracurricular activities. The magnitude of this trend is pointed up this week by a CW survey indicating that top research executives spend as much as 60% of their time on nonscientific activities, half of which are connected neither with research nor the administration of research.

Beyond his normal scientific and administrative workload, the survey shows, the top researcher-manager is being called on more frequently for opinions and decisions relating to sales, advertising, and public relations. Liaison with the sales department, some report,

is often time-consuming but worthwhile as insurance that new products will be properly launched.

Also, numerous companies are calling their research directors to judge and check the accuracy of new product advertising. They may also be called upon for an opinion on where to place such advertising—a trend that has led to overt appeals to research directors by advertising media.

And as the company's representative (e.g., at press conferences) the research executive figures in public relations, too.

Public Figure: This contact with the public now frequently extends to non-company-related activities. In the public eye, research heads have grown in stature



Directors Running

and prestige. As a result, they are increasingly sought after in civic affairs, charity drives, etc.

Company attitudes toward participation in such activities may range, CW finds, from disinterest to strong encouragement. But there's every indication that researchers are becoming familiar figures on television and radio programs, on civic planning boards, college executive committees, and in other public functions.

An outstanding example of the modern research director is Chemstrand's Frank Soday. Soday is chairman of the executive committee of the Athens College (Athens, Ala.) board of trustees, is active in regional chamber of commerce meetings, the Southern Regional Education Board, and other civic affairs.

Pfizer's Jasper Kane (no stranger to TV and radio interviews) is a member of the industry advisory committees of Adelphi College and St. John's University—among many other affiliations that require meeting the professional and lay public.

And Union Carbide Chemicals' research superintendent, Franklin Johnston, frequently addresses high school students on careers in chemistry and engineering.

Not all research administrators, of course, fall into this pattern. Some still give practically undivided attention to the purely technical aspects of the job. The scope and nature of non technical activities depend not only on the individual's inclinations, but also on the true extent of his administrative powers as defined by company size and organization.

Shifting Role: But in general, broader duties are the

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Pressure
Vessels!**



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RESEARCH

lot of most top researchers. Attesting to this change, which has come about mainly in the past decade, is a new Massachusetts Institute of Technology study* underscoring the increased authority accruing to research directors. It reports that 29 chemical companies included in the study had a total of eight vice-presidents of research and development (or similar title) in 1946, but had 23 such titles in '56.

This growth in administrative demands is causing companies to seek a new combination of abilities in potential research managers. Monsanto, for example, selects its research directors on both administrative and technical competence, maintains that the research director is not necessarily the ranking technologist. Monsanto sees the research director as "both scientist and businessman, whose area of responsibility is not merely research but also the business of research."

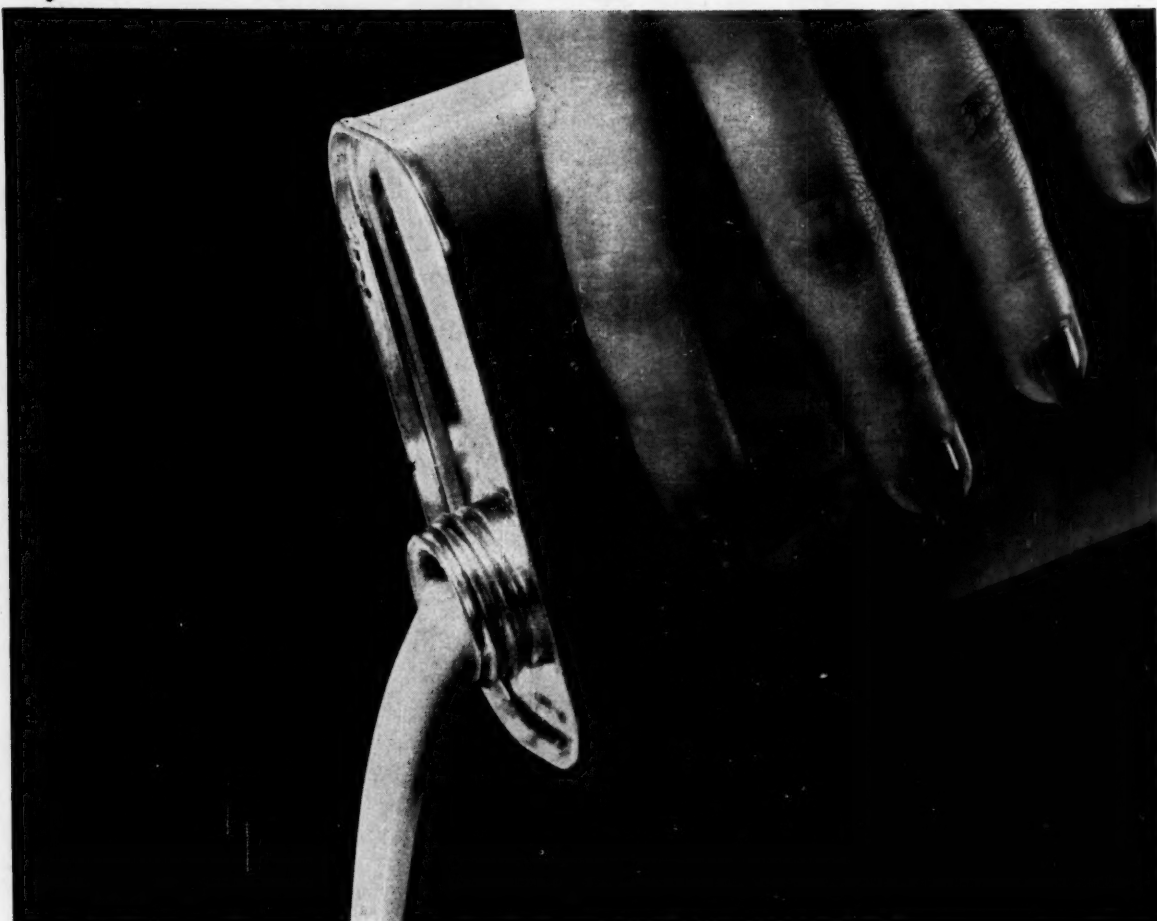
Many research leaders find themselves in this category. American Potash & Chemical Corp.'s (Los Angeles) research vice-president, Joseph Schumacher, for example, spends almost all his time "dealing with people," helping to shape company policy planning. Schumacher, who confesses to an occasional feeling of nostalgia for the laboratory, shares a problem common to the new era of research management—the need to travel.

Bumpy Road: Research heads, in general, report that the travel involved in their jobs is at an all-time high. Some feel this is reasonable. Others resent the encroachment on their family life and relaxation time. Few, however, have the problem of Stauffer's vice-president, Chester Arnold, who must make frequent trips between his company's laboratories on the East and West coasts. Arnold figures it makes little difference whether he gets his work done while he is on a plane or in the office.

Other research executives, while conceding travel is a necessary evil, aren't entirely reconciled to it. But all admit that the mileage they pile up, month after month, is part of a responsibility that cannot, in conscience, be shirked—although it may occasionally be delegated to subordinates.

Some of the things research di-

*Presented by MIT's Albert Rubenstein at the Eighth Annual Conference on Industrial Research, Arden House, Harriman, N.Y. (CW, June 22, p. 70).



Dowicide preservatives prevent product breakdown

... protect quality in canned products

In tests on two emulsion liquid floor wax samples stored for two weeks at 98°F., one sample remained pure, liquid and uniform. The other became putrid, viscous, discolored and completely unusable, due to bacterial action.

The two samples were identical except for one important difference: the one *not* affected by bacteria had been treated with a Dowicide® preservative. The dual job of protecting quality and prolonging the effective life of

canned products through control of bacteria and fungi is an important one. And it's one that Dowicide preservatives do extremely well.

If your product is anything short of perfection, one of fourteen Dowicide preservatives may possibly improve it. Let our laboratories help you choose the right one. For specific information, return the coupon to us. THE DOW CHEMICAL COMPANY, Midland, Michigan.

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Please send me further information on the uses of Dowicide preservatives for:

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FIRM _____ ADDRESS _____ ☐ adhesives ☐ cutting oils ☐ petroleum
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But these are only a few of the many diverse uses of the various PLURONICS. You may be able to profit by them, too.

We'll help you. Send for a copy of our PLURONIC Grid, giving us as much background information as possible on the characteristics you're looking for, or the application you're interested in. We'll send data sheets and other technical information that will enable you to select the proper samples for your own particular product. Samples, of course, are available upon request. *REG. U.S. PAT. OFF.

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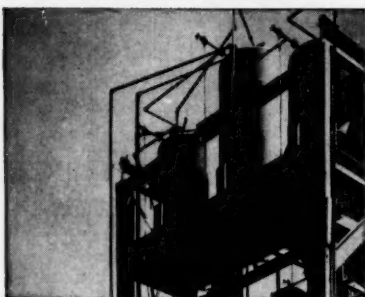
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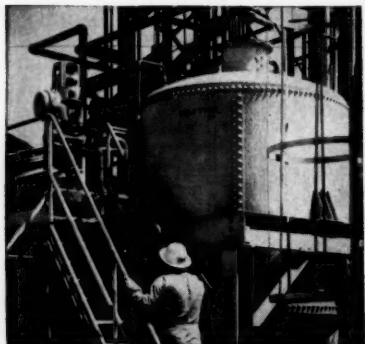
August 10, 1957 • Chemical Week

Do you need a reducing agent...



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- PAINT INGREDIENT?
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Zinc Dust often will do a better job than other elements or compounds; and it is usually much less expensive to use.

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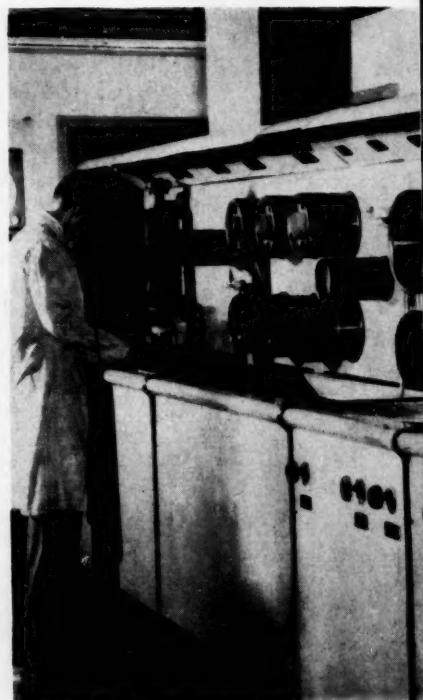
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RESEARCH

rectors are asked to do can be a blessing in disguise. That's particularly true of interviewing prospective employees (especially Ph.D.s), which helps give them better control of the caliber of research personnel.

Just the change of pace involved in getting away from strictly scientific tasks can be beneficial, some find, in reviving sagging spirits or helping to spark new ideas.

While some research heads feel that time away from their basic function—technical leadership—is too demanding, most think it is mandatory for advancement on the administrative ladder. The ability to wear many hats, they find, is not only an advantage but also may be essential for success as a modern research director.



Viscose Gets Set

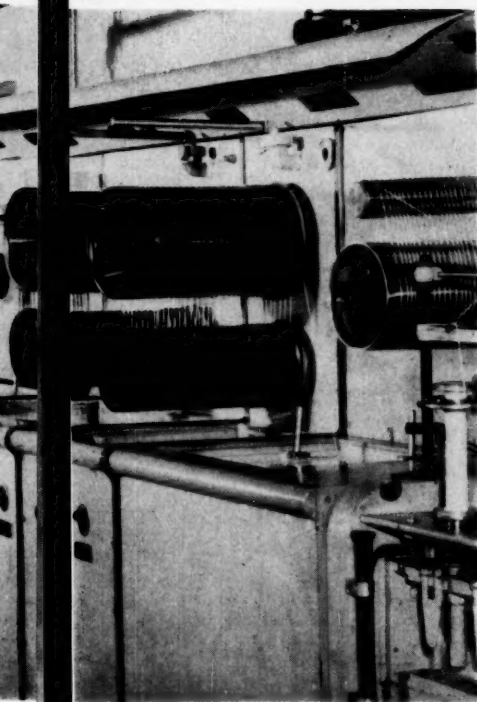
This experimental rayon spinning machine is a hole card in Rayonier Inc.'s (New York) plans for the future of viscose high-strength tire yarn and staple fiber. Designed and built at Rayonier's new research laboratory in Whippany, N.J., the new machine extrudes viscose (xanthate) solution into sulfuric acid-sodium sulfate-zinc sulfate solution, subjects the solidified filaments to a special

REPORTS

Available from the Office of Technical Services, U.S. Dept. of Commerce, Washington 25, D.C., are the following new reports:

- The "Chemical Resistance of Plastics" (PB 121113, \$9) offers 475 pages of data on 25 plastic materials, both thermosetting and thermoplastic. A broad range of commercially available rigid plastics were tested against numerous chemicals.

- "An Approach to the Synthesis of a Polyamide Plastic with Hydrophilic Properties" (PB 121473, 50¢) reports apparent success in a new approach to the synthesis of tetra-*o*-methyl-D-glucaric acid using the lactone of D-glucaric acid.



et for the Long Pull

stretching operation that imparts high wet strength, high dry strength. Rayonier produces no rayon and says it doesn't plan to, but it is a major supplier of wood cellulose to rayon makers. High wet strength could open new markets for viscose in apparel and industrial uses, is a feature of American Viscose Corp.'s new Avisco XL staple fiber (CW, May 18, p. 82).

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- (e) Controlled (reduced) penetration into porous surfaces
- (f) Color uniformity, non-flooding, non-silking, etc., in pigmented systems
- (g) Product stability: improved compatibility of ingredients, preventing their separation or bleeding on standing
- (h) Improved applicability (better brushability in paint systems, etc.)
- (i) Lower cost of many products through use of higher solvent, lower solids concentrations
- (j) Greater freedom in formulating

...if you make these products:

Adhesives (non-aqueous)
Calks, Putties and Glazes
Carbon Paper
Ceramic Solutions
Coated Fabrics and Paper
Cosmetics
Dry Cleaning (Spotting)
Compounds

Inks:

- (a) Textile Printing
- (b) Silk Screen Printing
- (c) Mineral Oil (News)
- (d) Oleoresinous
- (e) Glycol (Steam Set)
- (f) Flexographic
- (g) Ball Point

Lubricants

Pharmaceuticals
Polishing Compounds

Protective Coatings:

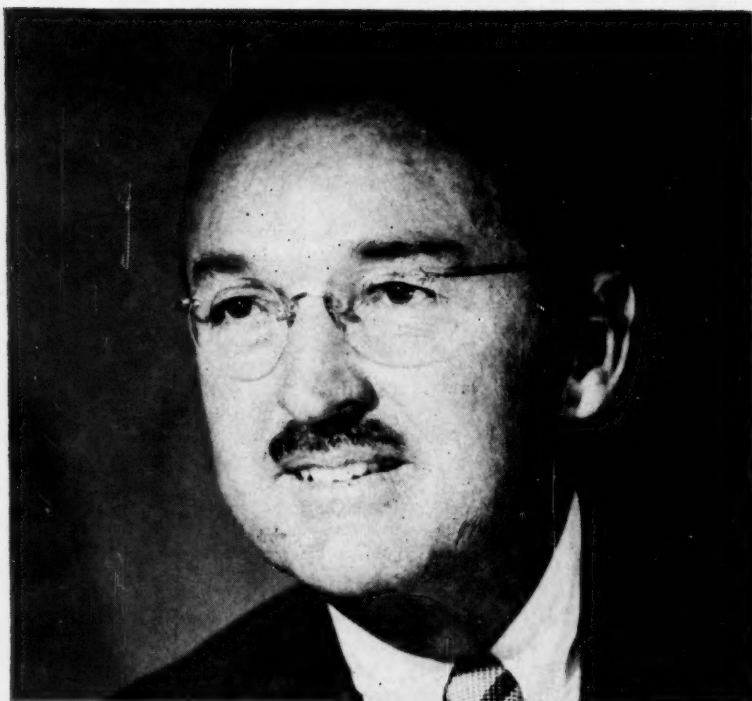
- (a) All trade sales
 - (b) Industrial primers and coatings
 - (c) Pigment stains
 - (d) Colors-in-oil
 - (e) Wood fillers
 - (f) Shellac
 - (g) Traffic paint
- Reinforced Plastics:
(a) Polyester
(b) Epoxy
- Rubber Cements and Solutions
Vinyl Plastisols and Organosols
Water-in-Oil Emulsions
Wax Polishes (Liquid and Paste)

For trial sample and descriptive literature, write to Dept. CW-27.

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Carter's Hoyt: He doesn't tamper with success.

PAT LIVERLIGHT

Keeping Close Rein on Carter

Speculation that mergers and/or acquisitions were ahead for Carter Products were triggered recently when Carter converted its authorized stock of 26,000 shares into 3 million common shares—2,565,000 outstanding, including 500,000 put on the market a few days ago (CW, Aug. 3, p. 22). But, if Carter is planning to merge with another organization, it was news last week to the company's president, Henry Hoyt.

Hoyt told CW that his company is small but diversified, and that he expects it to stay that way.

Hoyt explained that the prime reason for the conversion was to permit minority stockholders to determine the market value of their holdings. They got the answer when the price of the newly offered shares shot to \$32/share 48 hours after it opened at \$22.

None of the money from this activity goes into Carter's coffers, Hoyt makes clear. Since the stock that was sold belonged to minority stockholders,

the sales simply meant a redistribution in ownership of about 20% of the stock. Control of the company remains securely in Hoyt's hands. He and his family (his two sons are with the company) own more than 50% of the stock, and they don't intend to relinquish it. Says Hoyt, "I like it this way."

Hoyt also likes Carter's position as a firm with a broad product line, intends to keep it that way. He discounts current economic theories that a small firm can't successfully compete with the "giants," points out that his company has been "battling them for years" and has managed to hold its own quite nicely.

Since the company gets about half of its sales dollars from its own sales of the tranquilizer, Miltown, and the licensing of meprobamate (key ingredient of Miltown) to others—e.g., American Home Products—there has been some speculation that the company might increasingly stress ethical products. However logical this seems,

it's countered by Hoyt's contention that Carter intends to remain diversified, continue to expand its efforts in the proprietary and toiletry fields.

In these latter fields the company is doing well:

- Little Liver Pills sales are selling better than ever. Even if the Federal Trade Commission wins its long fight with the company over the name of the product and some of its claims, Hoyt says it wouldn't hurt sales appreciably.

- Colonaide, a recently introduced laxative, has shown promise in regional markets, is now getting started in national distribution.

- Rise, Carter's aerosol shave cream is the No. 2 shave cream seller in the U.S. Colgate, which has had a series of defeats over infringement of the Carter aerosol patent, is now using a hydrocarbon propellant to get around these patents, but Carter is fighting this move, too. Carter expects to collect a fistful of cash from Colgate on that company's initial infringement, and will collect even more if the courts uphold Carter's contention that Colgate is now merely using an equivalent ingredient in their aerosol shave cream.

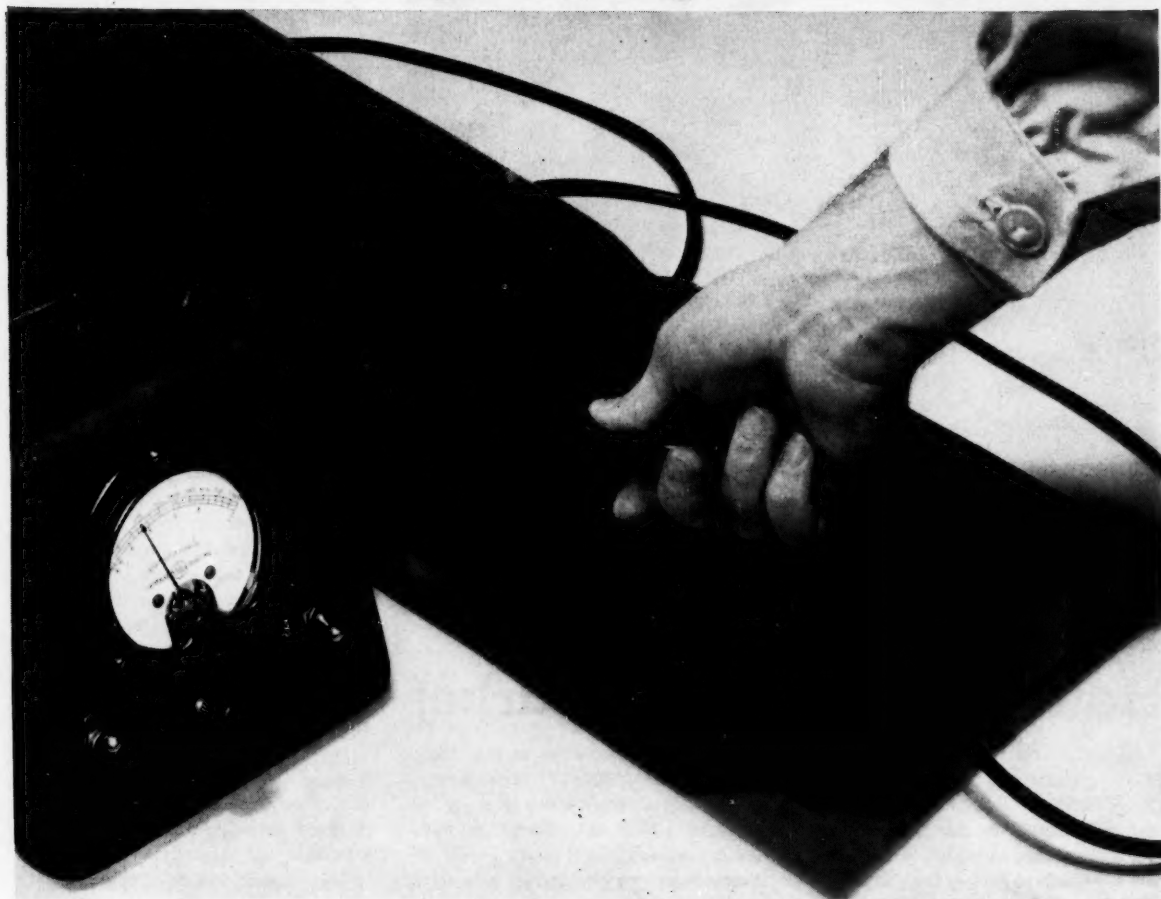
- Arrid is the largest-selling cream deodorant in the U.S.; and offshoots of the product, Arrid Men's Spray and Arrid Whirl-In, are just getting into national distribution. Nair, a dipilatory in lotion and cream form, is the biggest seller in its field.

Ads, Not Salesmen: There won't be any changes in Carter's marketing procedures in the near future, says Hoyt. Carter has very few salesmen, relies instead on a heavy advertising budget (last year: \$15 million) to put over its product lines.

How well this works is evident in the ethical field, where Miltown, without detail men to push it, has grabbed 40% of the total sales of meprobamate. American Home Products has 60%, with virtually the identical product, tagged Equanil, but it also has 900 detail men.

With net sales of \$41.8 million (up from \$11.5 million in '53) and a gross profit of \$26.9 million (up from \$8 million in '53), it's hardly likely that anyone will try to persuade Hoyt to change his tactics. Obviously in the mind of the present stockholders is the sentiment: "We like it this way."

Not a thin spot anywhere!



Rheem engineers check uniformity of linings with super-sensitive film thickness gage.

New Rheem Centrifugal Spray Process gives you a completely uniform lining...drum after drum after drum!

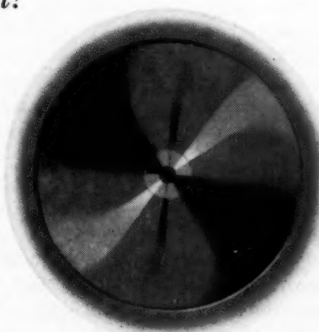
It's been checked out again and again in Rheem laboratories. It's been proved time after time on rough and tumble test-trips in the field.

When a drum lining is applied by the new Rheem Centrifugal Spray Process, all surface areas are—and stay—completely and uniformly coated! And that goes for any new Rheem drum lining you put under the gage too. For this new process is so fully automatic, linings can't vary from one drum to the next, one day to the next.

Indeed, Centrifugal Spraying is a vast improvement over all other lining methods. It uses no air, thus eliminating grease, dust, and dirt—a major problem with linings applied by the conventional system.

It eliminates pinholes and blisters. It eliminates chance for human error. And Centrifugal Spraying—teamed with the new Rheem vertical oven—makes possible a curing job never before equaled!

Remember—only the new Rheem Centrifugal Spray Process gives you: (1) Uniform lining *thickness*—controlled to within .1 of a mil. (2) Uniform *viscosity* of lining materials with lower solvent content. (3) Uniform *application*. There's no air turbulence because there's no air used in the spray and no drum rotation. Spray always travels the same distance to coat all surfaces. (4) Uniform *curing*—thanks to vertical, 3-stage ovens with controlled air flow and temperatures.



New Centrifugal Sprayer spins off a continuous curtain of finely atomized lining material at a controlled, uniform rate.

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August 10, 1957 • Chemical Week



Small-town store owner is typical mail-order customer.

How to Tap the Rural Market

In the prairie village of Le Center, Minn. (population: 1,400), the Spors Co. is currently building a new plant that will almost double the physical size of facilities in which it conducts its wholesale mail-order business. This growth underscores Spors' success in a field that specialty makers could profitably learn more about.

By selling through mail-order wholesalers, many companies have found an economical way to merchandise their products in sparsely populated regions that they might otherwise not reach because of the high cost of sending out salesmen to make direct contacts.

Here's an indication of just how big wholesale mail-order selling can be. Spors, though a relatively isolated company, each year racks up sales of approximately \$6 million. And it's far from the biggest in the field.

Reaching the Small Customer: Spors describes its typical customer as a merchant in a town of 5,000 or less. This customer is usually in the hardware, variety, gift, general store or premium business, and he spends between \$25 and \$50 per order—depending on the season. His average invoice is about \$40.

Spors' business comes mainly from the surrounding five-state area, though it may ship several orders in a day to any of the 48 states, Alaska, Hawaii, Central America or Guam. Going to these customers each year is a total of 1.5 million lbs. of goods. Most of this goes out by express, truck and

rail, but a good portion also moves by parcel post. To bring goods in from the source of supply, the company generally uses its own fleet of trucks.

Household Chemical Guide: In the company's 590-page catalog,* the chemical specialties most in evidence are the home cleaners and insecticides. Beauty and health aids are also well represented. Most of these products are heavily advertised ones, such as Johnson Wax and Du Pont items; but there are also some lesser-known items, e.g., Serf-O-Let, Flush Clean, Por-So-Kleen and Cop-R-Stick.

It's obviously easier to get a nationally known product into a catalog. Selling the mail-order wholesaler on listing a new or lesser-known item is as big a job as getting a department store or other jobber or retailer to stock it. With Spors, one important consideration is the ability of a product to measure up to claims made for it by its manufacturer. On this point, the company says, "It's our opinion that the American housewife not only will more and more demand higher quality but also will absolutely require a product to do every single thing that the manufacturer claims it will—and more. We have seen some of the 'do everything' products drop by the wayside, while the products that are advertised for a single or special purpose, and really do their

*Which covers a variety of merchandise—from furniture to toothpaste.



In Le Center, Minn., a \$6-million/year wholesale business.



How many other profitable uses can you
find for this unusual softener...

AVITEX* MLF

The young lady is enjoying a towel that's soft, fluffy *and absorbent* because it was finished at the textile mill with AVITEX MLF fabric softener. Soon, she'll be able to impart these same desirable properties to her washable garments at home—by using a fabric conditioner containing the same active ingredient.

But we suspect that this is only the beginning. Consider the properties of AVITEX MLF. It's a cationic softener. But unlike other cationics, it does not reduce absorbency. It's also an anti-static agent... and has bacteriostatic properties, too. Furthermore, it's an essentially 100% active liquid that mixes readily with water.

You may find a use for it as a hair rinse ingredient—to make a lady's hair softer to the touch. Or perhaps

you'll decide AVITEX MLF will work well in a nail polish to keep it from becoming brittle on her fingernails. Possibly, you will add it to a shave cream or a skin conditioner formula... to help soften a man's beard.

Maybe you've already got some ideas of your own. If so, a request on your letterhead will bring details and a sample. Just write to: E. I. du Pont de Nemours & Co. (Inc.), Organic Chemicals Department, Dyes and Chemicals Division, Wilmington 98, Delaware.

*Reg. U. S. Pat. Off.



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SPECIALTIES

jobs, are the long-lived catalog items."

Items that are accepted for the catalog usually come to Spors' attention through salesmen, trade magazines, direct-mailing pieces or through trade-show visits by Spors' buyers. Spors prefers, however, to have a new product introduced and demonstrated by a salesman.

Paper Salesman: The company does some selling in addition to distributing catalogs, mainly on premium accounts, but the catalog is its main salesman. Terms to customers are 2%, 10 days to well-rated accounts. Its credit problems are not significant, appear to be "about the same as anyone else's."

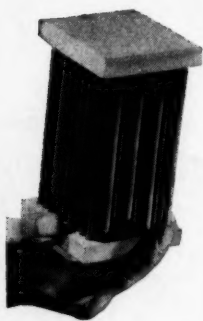
Though the company's out-in-the-country location affords relatively low taxes and low-priced labor, it faces some drawbacks: distance from Eastern sources of supplies (especially aggravating in the busy season when deliveries slow down) and the occasional lack of adequate help. It has about 140 employees for the January-September months, steps this up to 300 in the September-December period.

To help solve the manpower shortage, Spors a few years ago installed a Remington Rand system to control inventory and print customer invoices.

Growth in One Location: The firm was started by the late Frank Spors about 35 years ago, has always been located in Le Center, though it has had several opportunities to move to larger towns. The present owners are Warren G. Christianson (president) and John A. Goodacre (vice-president) plus five minority stockholders.

Underscoring Spors' confidence that the wholesale mail-order business has a big future: construction, now under way, of a plant that will add 135,000 sq. ft. to the firm's present 87,000-sq.-ft. facilities.

With a little effort, virtually any good chemical specialty can be sold to mail-order wholesalers. The result: penetration into those markets that don't justify a personal sales effort because of their low volume. Reaching the crossroads store is the wholesaler's forte. When you reach the wholesaler, you've gone a long way in reaching what otherwise may be inaccessible markets.



An important message to the man who thinks his air pollution problem is too difficult—or too expensive—to correct

Too often an air pollution problem exists today for one reason only: The company concerned does not yet know there is now at hand an efficient, effective method of correcting it—often at an actual saving through waste heat recovery.

The method is catalytic oxidation, and the firm that makes this development possible is Oxy-Catalyst, Inc.

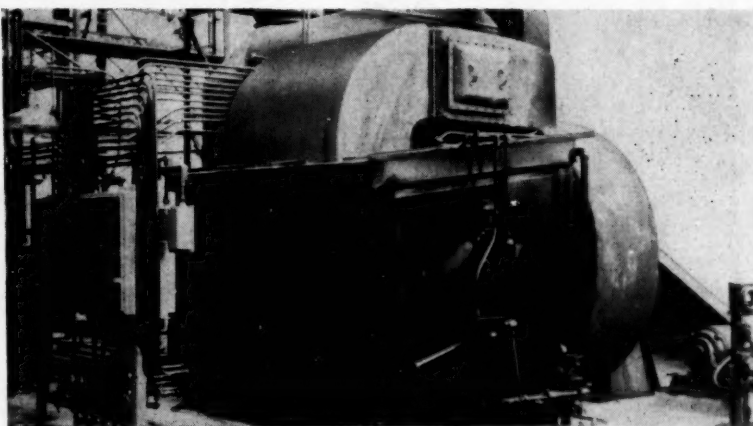
Catalytic oxidation works by "burning" harmful and irritating combustible contaminants in an exhaust stream at temperatures far below their normal ignition points. It provides close to 100% cleanup of foul-smelling fumes and odors. It reduces fire hazards and maintenance problems by eliminating troublesome condensates in oven and furnace exhausts.

Thus Oxy-Catalyst installations can not only control air pollution. They can also be used to release the latent heat energy in waste and process gases. And they can sometimes do both at once.

A More Efficient Catalyst

The key to successful catalytic oxidation is, of course, the catalyst itself. Features which make the Oxycat unique are:

- The combination of platinum and alumina, chosen from hundreds of elements and compounds as the most active and long lasting catalytic agent
- The carrier, a high-grade porcelain selected for its strength, chemical inertness, and resistance to high temperatures



Oxycat installation on Standard Oil Company of California's phthalic anhydride unit at Richmond, Calif.

- The patented method of applying the catalyst to the carrier
- The patented mechanical design of the Oxycat itself

The result of this combination of features is a catalytic unit with exceptionally long life at high efficiency. Oxycats are strongly resistant to thermal shock—to contaminating agents and clogging. There's no problem of frequent cleaning or reprocessing. Oxy-Catalyst installations are still functioning at high initial efficiency after over 20,000 hours without maintenance or servicing.

Already in Wide Use

Oxy-Catalyst installations are now working effectively in a wide range of industries

—oxidizing combustibles from such processes as asphalt oxidation; phthalic anhydride, polyethylene and ethylene oxide manufacturing; catalytic cracking; and many others.

Oxy-Catalyst installations are carefully engineered to your individual requirements, and our engineers, working with yours, can install Oxycats effectively in any existing plant. So, if air pollution is a problem in your operation—if irritating fumes and odors are costing you neighborhood good will—you should know that Oxy-Catalyst offers a practical, realistic answer to your problem.

Fill in the coupon, or write on your business letterhead, for complete information now.

OXY-CATALYST, INC.

Industrial Division
Wayne, Pa., U.S.A.



Fume Elimination Processes and Equipment
Industrial • Automotive • Consumer Products

Oxy-Catalyst, Inc.
Industrial Division, Wayne 6, Pa.

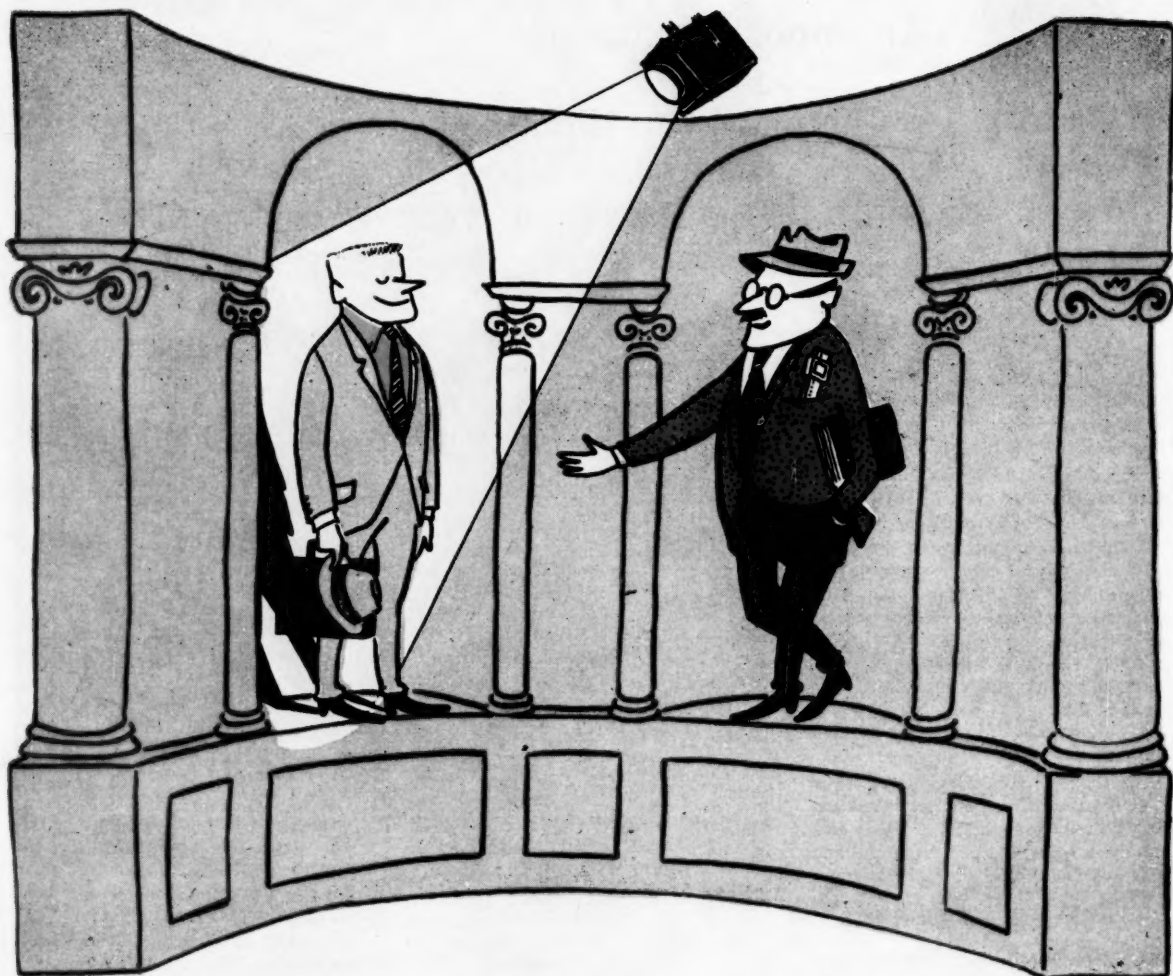
Please send me complete information on your catalytic oxidation process for air pollution control and waste heat recovery.

Name _____

Firm name _____

Street _____

City _____ Zone No. _____ State _____



Spotlight Shifts to Nontechnical Salesmen

Despite increasing evidence that the technical-manpower shortage may be easing, there's strong evidence this week that chemical companies expect to make wider use of nontechnical salesmen in the future. Hiring of the nontechnically educated sales trainee can no longer be regarded as a stop-gap practice.

What inroads are being made into chemical marketing by the man without a formal education in a scientific area related to the products he sells? What chemicals can he best sell? And—how well has he succeeded? Those were among the questions posed by *CW* to sales managers and

personnel directors last week. Here are the facts on the nontechnical man's role in chemical selling.

Nontechnical men have been utilized as salesmen since the beginning of the chemical industry. But when the industry's technology expanded and technical manpower became plentiful, chemical companies hired more men with chemical or engineering training. Now, however, the pendulum is swinging toward greater use of nontechnically trained men. Reasons:

- Shortage of technical manpower. Many firms have found that technical manpower can be more profitably employed in a technical capaci-

ty. Moreover, recruiters continue to find technical graduates highly disinterested in sales.

- Salary differentials. Income progressions favor the technical man employed in research or production. Thus, in the first 5-6 years, the chemist is likely to earn slightly more in research, development or production than in selling. Although the salesman's salary often catches up and surpasses that of the researcher, the initial differential makes salesmen harder to find.

- Unfamiliarity with sales career opportunities. Undergraduate technical students have little awareness of

YTTRIUM

Availability of high purity yttrium and rare earth oxides

A report by LINDSAY

Only three years ago, most high purity rare earths were little more than laboratory curiosities.

Today they are extensively used for

an amazing variety of chemical and industrial applications.

What happened? Lindsay technicians pioneered the first commercially

installed ion exchange unit for the production of separated rare earths. The process was patterned after techniques developed by Doctors Spedding and Powell of the Institute for Atomic Research at Ames, Iowa.

TYPICAL MAXIMUM IMPURITIES IN LINDSAY PURIFIED RARE EARTH AND YTTRIUM OXIDES

ATOMIC NO.	OXIDE	CODE	PURITY	% RARE EARTH MAXIMUM IMPURITIES AS OXIDES
57	La ₂ O ₃ . LANTHANUM OXIDE	528 529	99.99 99.997	0.01 Pr, 0.001 Ce. 0.0025 Pr, 0.0005 others
58	CeO ₂ . CERIC OXIDE	215 216	99.8 99.9	0.2 (largely La + Pr + Nd). 0.1 (largely La + Pr + Nd).
59	Pr ₆ O ₁₁ . PRASEODYMIUM OXIDE	726 729.9	99 99.9	1 La + Nd + smaller amounts of Ce and Sm. 0.1 Ce + Nd.
60	Nd ₂ O ₃ . NEODYMIUM OXIDE	628 629 629.9	95 99 99.9	1-4 Pr, 1-4 Sm, 0.5-1 others. 0.1-0.4 Pr + 0.1-0.4 Sm + 0.5 others. 0.1 (largely Pr + Sm).
62	Sm ₂ O ₃ . SAMARIUM OXIDE	822 823	99 99.9	0.2-0.7 Gd, 0.2-0.6 Eu, and smaller amounts of others. 0.1 (largely Nd + Gd + Eu).
63	Eu ₂ O ₃ . EUROPIUM OXIDE	1012 1011	98-99 99.8	1-2 Sm + smaller amounts of Nd + Gd + others. 0.2 (largely Sm + Gd + Nd).
64	Gd ₂ O ₃ . GADOLINIUM OXIDE	928.9 929.9	99 99.9	1 Sm + Eu + trace Tb. 0.1 Sm + Eu + trace Tb.
65	Tb ₄ O ₇ . TERBIUM OXIDE	1803 1805	99 99.9	1 Gd + Dy + Y. 0.1 Gd + Dy + Y.
66	Dy ₂ O ₃ . DYSPROSIUM OXIDE	1703 1705	99 99.9	1 (largely Ho + Y + Tb + small amounts of others). 0.1 Ho + Y + traces of others.
67	Ho ₂ O ₃ . HOLMIUM OXIDE	1603 1605	99 99.9	1 (largely Er + Dy + small amounts of others). 0.1 Er + Dy + traces of others.
68	Er ₂ O ₃ . ERBIUM OXIDE	1303 1305	99 99.9	1 Ho + Dy + traces Yb and Y. 0.1 Ho + Tm.
69	Tm ₂ O ₃ . THULIUM OXIDE	1405 1403	99.9 99	0.1 Er + Yb + trace Lu. 1 Er + Yb + trace Lu
70	Yb ₂ O ₃ . YTTERBIUM OXIDE	1201 1202	99 99.9	1 Er + Tm + trace Lu. 0.1 Tm + trace Lu + Er.
71	Lu ₂ O ₃ . LUTETIUM OXIDE	1503 1505	99 99.9	1 Yb + Tm + traces of others. 0.1 Yb + Tm + traces of others.
39	Y ₂ O ₃ . YTTRIUM OXIDE	1112 1115 1116	99 99.9 99.9+	1 Dy + Gd + traces Tb and others. 0.1 Dy + Gd + traces Tb Approx. 0.05 Dy + Gd.

Lindsay's pilot plant rare earth ion exchange installation had 40 six-inch columns. This unit made purified rare earths available to industry for the first time in practical, even though still limited, quantities.

The response from industry was so enthusiastic, we were forced to expand our ion exchange facilities rapidly. Today we have in continuous operation more than 100 columns with large production units of eighteen-inch and sixty-inch diameters.

With our larger production facilities, we are now making prompt shipments of high purity yttrium and rare earth oxides in quantities from a gram to hundreds of pounds.

COSTS GREATLY REDUCED

Of course, as production of purified rare earths increased, costs came down. For example, only three years ago Terbium Oxide cost \$500 a gram. Today you can obtain moderate size lots at less than \$3 a gram.

Now that you know these high purity oxides are so readily available and the cost so remarkably low, what are *you* waiting for?

Rare earths, in purities up to 99.99%, have captured the interest and imagination of scientists in many industries as valuable new tools for the improvement of processes and products.

Your research, product development and production people should investigate the possibilities of these materials. Our bulletin "Purified Rare Earth and Yttrium Oxides" will give you detailed information and prices.



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SALES

chemical sales opportunities. In contrast, nontechnical graduates, say personnel managers, are more conscious of the possibilities.

How Far? Right now, most chemical companies use nontechnical salesmen — American Cyanamid, Union Carbide Corp., Dow, Monsanto, Philadelphia Quartz, Archer-Daniels-Midland, Pennsalt, Wyeth, and Smith, Kline & French, to name just a few. Dow estimates that half its sales force is comprised of nontechnical salesmen; Du Pont reports a nearly identical figure.

It's difficult to pinpoint the areas where nontechnical salesmen are most widely employed. The nontechnical man sells molding powder (plastics) and pharmaceuticals, heavy organic and inorganic materials, consumer-type chemicals and specialties (antifreezes, batteries, soaps, etc.).

The technical man's services are generally called for where technology is a strong factor, such as in selling paper, coatings, dyestuffs, textile chemicals, inks and agricultural chemicals. But practices differ—for example, American Cyanamid strongly prefers a technical man for its paper chemical sales, whereas, Monsanto's Organic Division is getting excellent results from nontechnical salesmen in that field.

Even in protective-coating products—an area frequently cited as a domain where technical graduates are essential—the nontech man is proving a success. ADM says its intensive training course gives the nontech man the background necessary to do a first-rate job.

Shell Chemical, which formerly insisted on a chemical or engineering degree, will now consider a man with a minimum of two years of chemistry. Stauffer is actively weighing a similar move for its industrial chemicals. Monsanto's Organic Division has upped employment of nontechnical men in sales in the past two years. American Cyanamid is using more nontechnical men in pharmaceutical selling, plans to utilize them more in selling heavy organic and inorganic items. And Bakelite, though declining to estimate any relative change in composition of its sales staff, says that it's giving the qualified nontechnical man a much closer look now than it did a few years ago.

Who Can Use? Whether or not a

firm can make use of the nontechnical salesman depends a lot on the products it handles, its sales organization and the strength of its technical service organization. Generally, the older and more standardized a product is (heavy organic and inorganic chemicals, especially), the easier it becomes to train a nontech man for chemical sales.

Sales departments selling the entire product line of a division or company find it difficult to make wide use of the nontechnical salesman. Because some products are likely to be fairly new and need considerable explanation to potential customers, the technical man's chemical background gives him a distinct edge. But in the case of a product-type organization, divisions can be created on the basis of the technical know-how needed to sell, and the nontechnical salesman may be employed to full advantage. Too, the smaller number of items involved in the product-line structure usually makes it easier for a salesman to acquire product knowledge.

Technical-service departments also

influence the feasibility of using nontechnical salesmen. The stronger the technical-service group, the easier it is for a company to use nontechnical staffers.

Selection: Sales and personnel managers give the nontechnically educated applicant closer scrutiny when they select salesmen. A limited technical background is always an asset. And a man with a business administration major is most preferred.

But management looks most often for intelligence, perseverance, willingness to learn, personality, leadership and persuasiveness. It's rare that a chemical company—even among those that prefer the technical graduate—will pass up an outstanding salesman prospect. One sales manager put it this way: "Are you looking for a man or a degree? Give me the man, and I'll make a salesman out of him."

Training: Surprisingly, few companies train the nontechnical salesman differently than they do the technical man.

Usually, all men take the same program. Essential guidepost: attainment

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als: Weed
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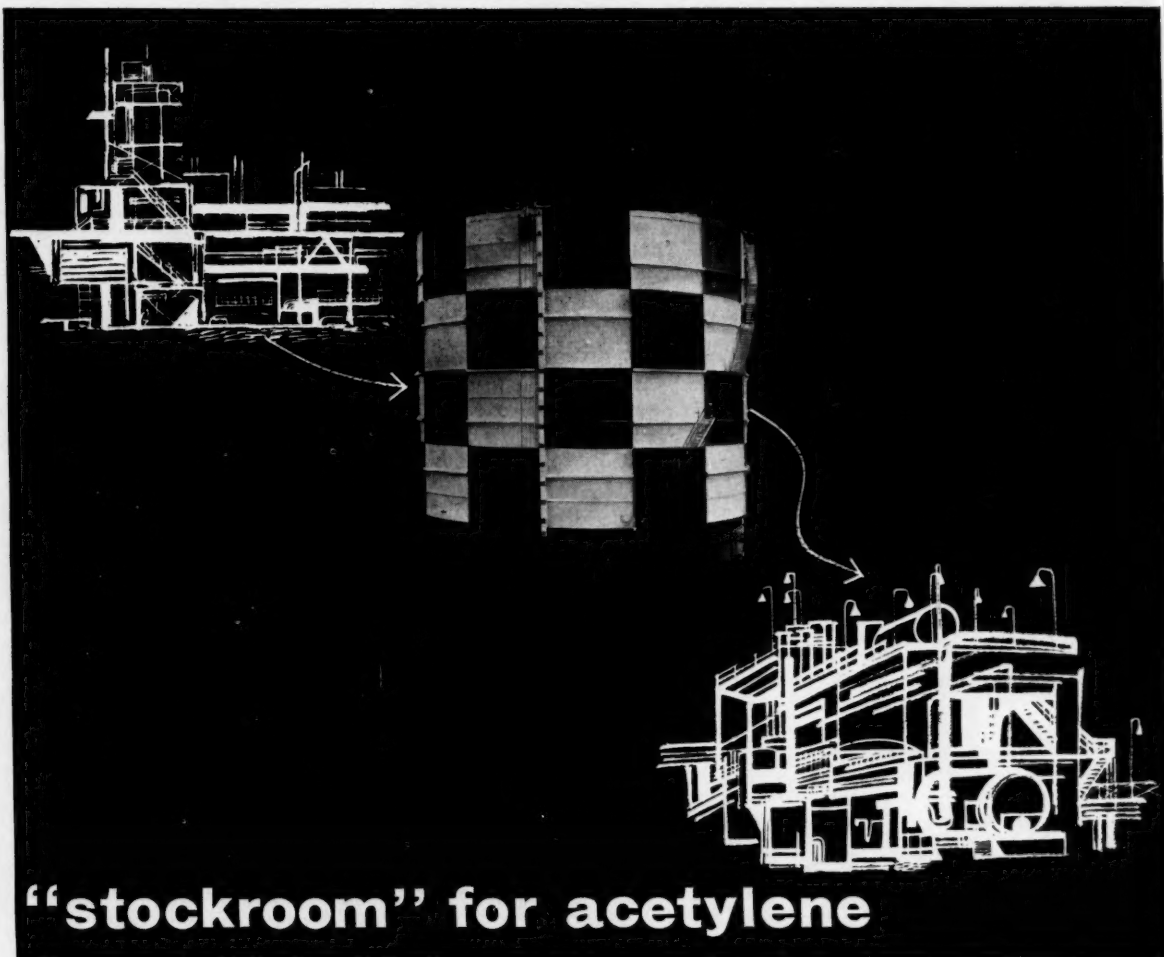
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source of low-cost nitrogen.
Bony! Buy Lion!

Debut of the Streamlined Big 'M'

Another streamlined chemical trademark made its debut this week as Monsanto took the wraps off a new version of the old block "M." The new emblem features the word Monsanto in handlettered sans-serif

type in place of the Roman style formerly used; and the horizontal rule has been dropped. Monsanto expects the new look will increase readability and recognition. The symbol will soon appear in promotion.



“stockroom” for acetylene

Linde purchases Wiggins Gasholder for storage of acetylene between production and use cycles

When Linde Air Products Company's new acetylene plant in Montague, Michigan goes “on stream”, a new 100,000-cubic-foot Wiggins Gasholder will play a vital role in the operation. Every cubic foot of acetylene produced will pass through the “stockroom” on its way to DuPont for use in the production of Neoprene. The gasholder will provide acetylene storage and will serve as surge capacity to enable Linde to satisfy both normal and emergency requirements.

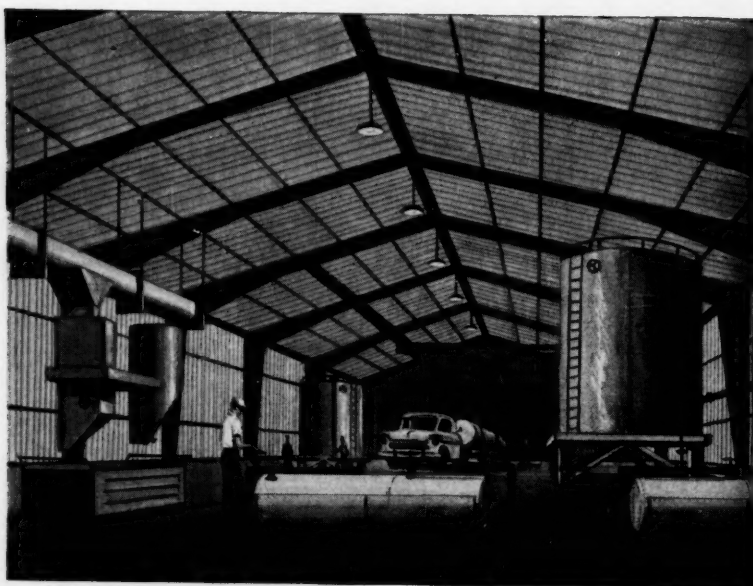
If you produce, store or use gases, investigate the advantages of Wiggins Gasholders. They can be built to any capacity—from 50-cubic-feet to a million. Call or write General American for complete information.



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Chemical men get rugged clear-span design, attractive *Stran-Satin* walls with NEW STRAN-STEEL BUILDINGS

The open, clear-span design of Stran-Steel buildings makes them ideal for the large tanks, vats, and associated piping required for chemical processing operations. In addition, new Stran-Steel buildings have a look of quality never before achieved in an all-steel structure.

Start with the smart *Stran-Satin* finish. *Stran-Satin* metal wall, exclusive with Stran-Steel, provides a strong, durable exterior with the weather resistance of zinc-coated steel. Special protective coatings are available for extreme corrosive conditions. Peaks, gables and eaves are completely enclosed with smart fascia flashing.

Under this attractive exterior is a rugged steel structure. At the peak and knee, the continuously welded rigid frame I-section steel plate beams are securely bolted together. Each frame is also permanently bolted to the foundation.

New Stran-Steel buildings are quickly erected at minimum cost, provide clear, unobstructed space for large equipment, and may be provided

with such required accessories as overhead craneways or large access doors. With Stran-Steel buildings, you get the cost-saving features of a pre-engineered structure in a quality building that is fire-safe and easy to insulate. They are available in widths of 32, 40, 50, 60, 70, and 80 feet, and multiples thereof.

Up to \$25,000 is available to finance these buildings through the Stran-Steel Purchase Plan. As little as 25% initial investment; up to 5 years to pay. Ask your Stran-Steel dealer for the complete story. He is listed in your classified telephone directory.

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SALES

of a specified, minimum level of product and end-use knowledge. Training can vary from a few weeks (for a drug salesman) to over a year (for a salesman selling highly complex products). Most firms concede, however, that the nontechnical man must apply himself more diligently, can't fall back on college training.

Chemical sales managers report favorable experience with nontechnical salesmen. One detailed the case of a calculating-machine salesman who quickly became the company's No. 2 salesman on the West Coast, despite a complicated product line. American Cyanamid reports that the nontechnical man hired for an appropriate sales position stands a good mathematical chance of making the grade.

Two reasons sales managers cite for not hiring nontechnical men for sales, have not proved to be pertinent, the *CW* survey shows:

(1) Technical background is essential for selling the product. Countering this, some companies contend that training and field experience more than offset lack of technical training.

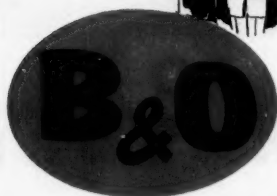
(2) Limited opportunity for advancement. Ordinarily, the higher a man goes, the more he will come into contact with technical departments, and the more he will need a technical background. But most companies feel that there is still much room for promotion, horizontally—to a better sales territory, to field sales management, to advertising, market research, and other staff jobs.

Payoff: For the chemical company hiring nontechnical men for sales, there are important advantages: the policy allows sales departments to be adequately staffed; the pool from which selection can be made is greatly widened; and, perhaps most important, the nontechnically trained salesman brings a different point of view and a certain intangible "balance" to the staff. Business majors, particularly, often have a "commercial" sense, useful in locating prospects, talking dollars-and-cents propositions.

And even though, as some sales managers hold, the good nontechnical salesman may be just as hard to find as the good technical salesman, they are worth seeking out. That's why the role of the nontech man in chemical selling is assured, why more firms will be making more use of him in the future.

Plotting a new plant site?
"Elementary, my dear Watson"...
The Solution can be found on the B&O
Evidence is yours for the asking...

Plan with
a B&O man!



BALTIMORE & OHIO RAILROAD

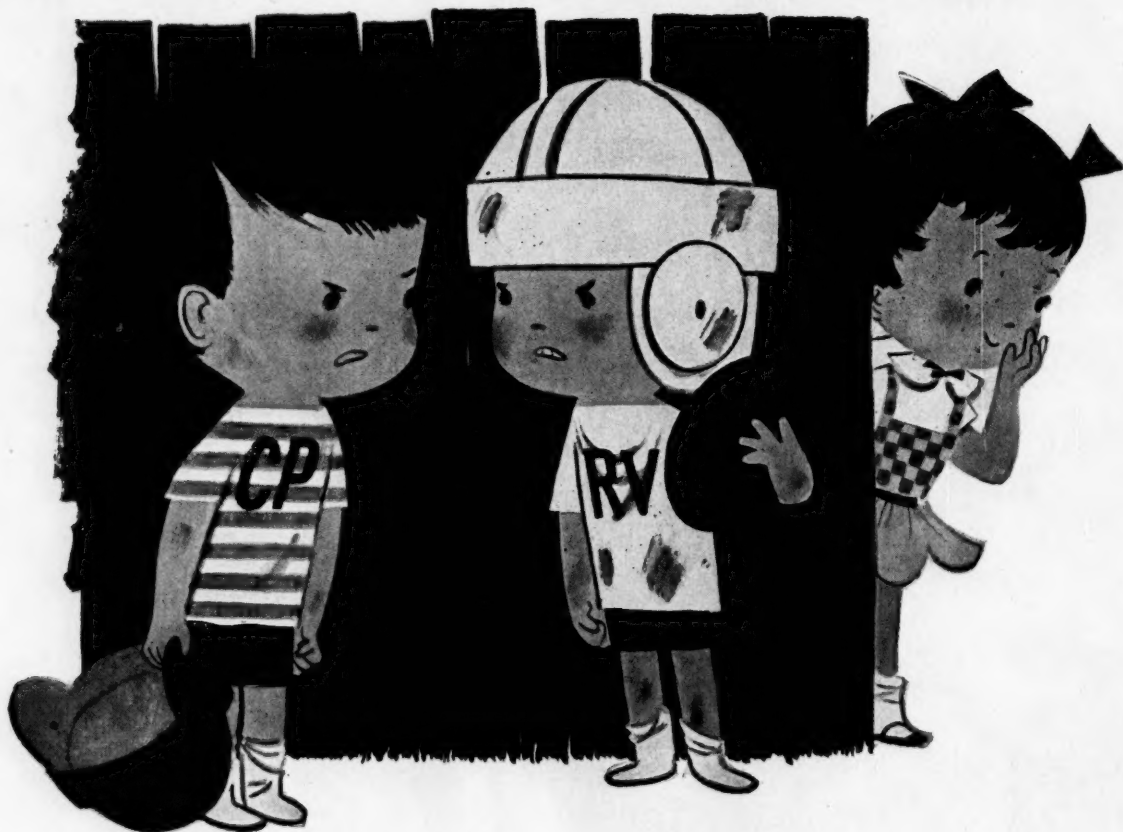
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United States Rubber

Technology Newsletter

CHEMICAL WEEK
August 10, 1957

A solvent extraction system for removing uranium from carbonate leach solutions has just been put together by Arthur D. Little's Western Division (San Francisco).

Right now, ADL researchers admit that the system can't compete with presently used (precipitation) systems for accomplishing the same thing. They feel the new development is important because they see the industry heading more and more toward use of carbonate leaching processes for recovering uranium. And they think their process stands a good chance of proving capable of being commercialized.

In the new system, researchers complex uranium as a singly charged negative ion, then extract it with a singly charged organic cation into a suitable organic solvent. Most effective complexing agent found so far is 8-hydroxyquinoline, which reacts with the uranyl ion to form $\text{UO}_2(\text{Ox})_3^-$.

ADL researchers think that the uranium industry is going to find itself trending more and more toward the carbonate—rather than acid—leaching, particularly as the proportion of low limestone ores used decreases. The best opinion is that for economical acid leaching, limestone content shouldn't be higher than 15%. When it goes over that, the amount of acid needed to neutralize the ore starts pushing costs out of bounds.

Work was carried out on a bench scale under an AEC contract. Earlier, the firm had reported work on a "solid solvent" (char) system that would accommodate slurries (*CW*, March 30, p. 76).

•
A high-purity silicon made by sodium reduction of silicon tetrachloride was reported by Robert Aries (R. S. Aries & Associates) at the recent 16th International Congress of Pure & Applied Chemistry. In delivering a paper on silicon, he alluded to the process, that it is being used in an Aries-engineered plant (outside the U. S.); "several thousand pounds" have been made. The product, he says, contains boron in the order of two parts per billion, has resistivities up to 500 ohm-centimeters. The price, he adds, ranges from \$250 to \$350/lb.

•
The Patent Office feels its punch-card patent-searching system (*CW*, Jan. 19, p. 52) is a "huge success." It plans a September get-together with a special industry committee, at which it will explore possible ways of making the system—first used with steroid patents—more useful to drug firms.

By punch-card indexing the 2,000 existing steroid patents, the Patent Office chalked up an 80% saving in search time in processing 64 patent applications involving steroids. This means that one examiner did

Technology

Newsletter

(Continued)

as much as five examiners could do when using manual searching techniques—"in the same time, with a higher degree of accuracy," says project chief Don D. Andrews. The big saving came from examining files of existing steroid patents to check novelty of invention claims of pending applications.

The Patent Office has now asked the American Drug Manufacturers Assn. to spearhead an effort to expand the file cards to include steroid literature from all technical publications. Data would be analyzed, coded and punched into the master file along with existing patents. Copies of the entire file would be offered for sale at a nominal cost.

The plan will be further explored at a meeting between an ADMA committee and Patent Office officials next month at the American Chemical Society's meeting in New York.

Endicott Johnson will try a switch in its tanning operations

—from a water-based to a solvent-based process. Reason: the company will be able to recover the solvent, cut down drastically the volume of effluent its plant at Endicott, N. Y., sends into the municipal sewage system.

The firm will invest \$100,000 in lab study, expects it will take a year or two to find "anything conclusive," and figures four or five years before it could make the switch on a plant scale.

Now another firm is trying to commercialize "carbon fibers." Atomic Laboratories (Berkeley, Calif.) is offering pilot-plant quantities (up to 1,000 lbs./month) of carbon wool described as "dense fibrous form of pure carbon that can be activated or used in its inert form." Available in diameters of 5 to 50 microns, the fibers are reportedly clean, strong, flexible.

Atomic Laboratories is now selling the material for \$10/lb., expects to drop it to \$2/lb. when larger-scale operations get under way. The firm feels it can afford to charge a premium for its product (over granular carbon) because it will give longer service. In some cases, they point out that when granular carbon is employed, it forms into large unworkable chunks, must be discarded after it has performed its initial job. Carbon fibers, on the other hand, could be woven into mats, which would retain their form. Some of the applications being eyed: filtration, semiconductors, air-conditioning units in nuclear plants.

Atomic Laboratories makes its product by carbonizing rayon. The trick is to convert rayon, a carbohydrate, by delicate heating into carbon, without causing the carbon filters to lose their strength.

The patent rights on the process are held by W. F. Abbott, of Los Angeles; Atomic Laboratories is his licensee.



RAYON is a good mixer!

Rayon is a universal favorite because it comes in so many varied textures and wonderful colors. Increasingly, too, this versatile test-tube fiber is being blended with others to give fabrics luxurious appearance at reasonable cost. Truly, rayon is a good mixer in every way.

Here at Buckeye, rayon is an old friend. Back in 1920 we were the first to supply the textile industry with cellulose, basic raw material in rayon. Later we worked hand-in-hand with pioneers in the production of ace-

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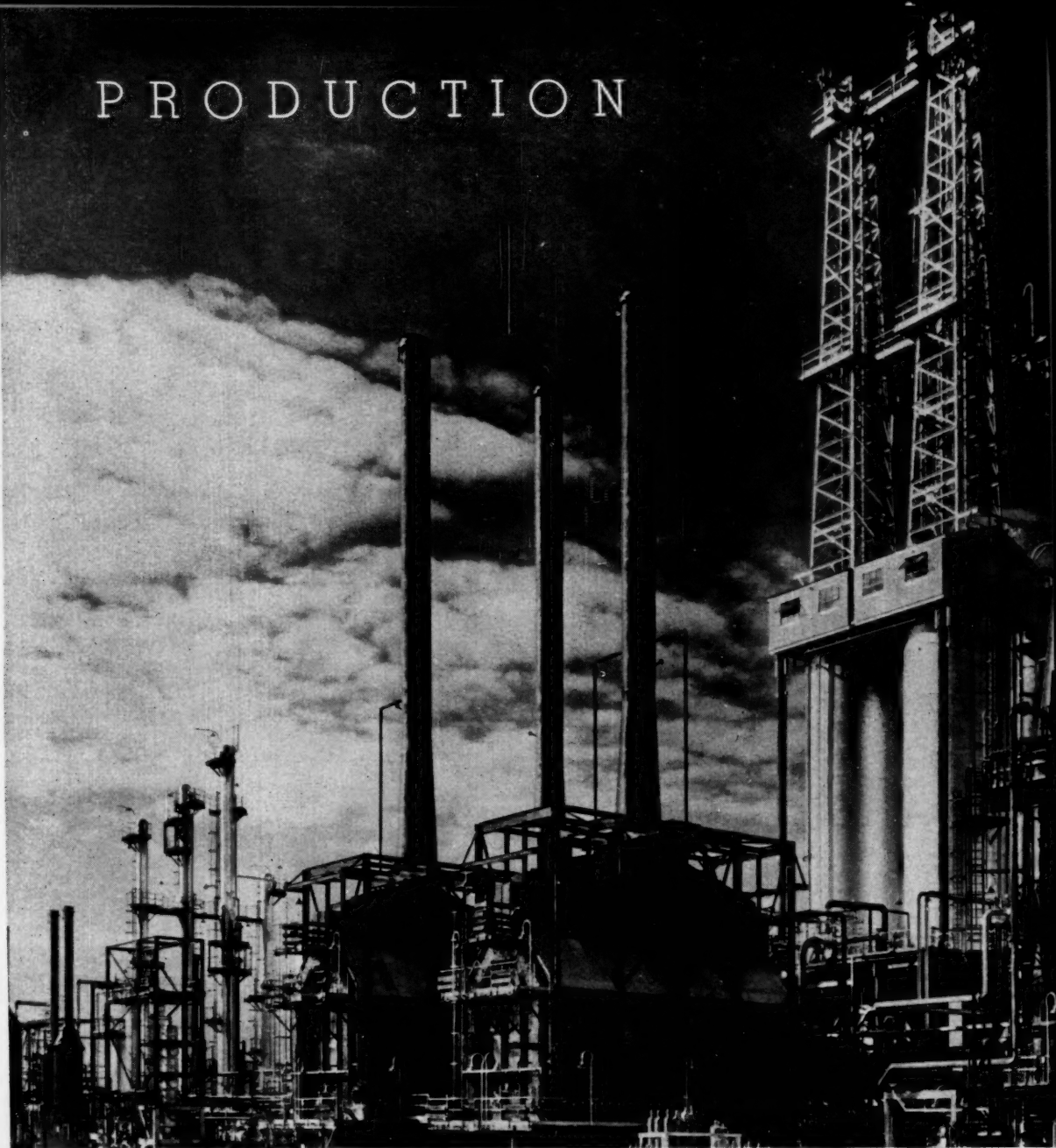
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*Cotton linters plant at Memphis, Tenn.
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RAYON AND ACETATE *are two of the many remarkable products made from Buckeye Cellulose*

Buckeye 
 **first in
cellulose**

PRODUCTION



Stacks and towers of American Gilsonite Co.'s newly commissioned coke and gasoline plant jut bold

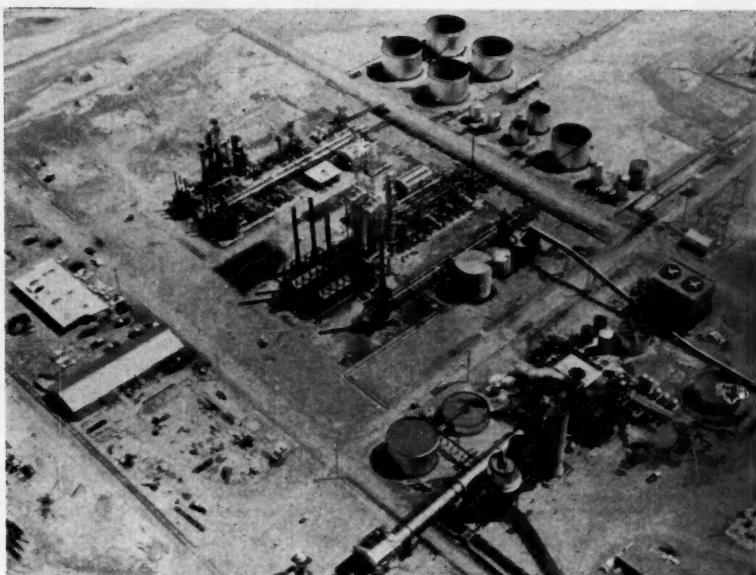
First Gilsonite Refinery Pulls Profits from

Late last week, three hopper cars full of metallurgical coke were rolling along the Denver & Rio Grande Western R.R. toward the aluminum plants of the Pacific Northwest. They comprised the first shipment from American Gilsonite Co.'s \$18-million gasoline and coke plant at Gilsonite, Colo., 12 miles northwest of Grand Junction (CW, July 28, '56, p. 34).

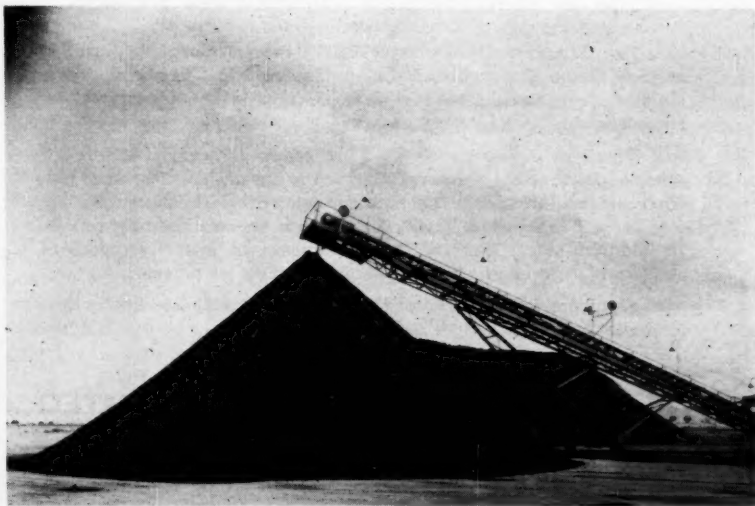
The plant was "opened" with appropriate ceremonies on Aug. 2, but actually it had been in shakedown operation during the previous month. Already on the re-

finery grounds were two huge storage piles—one of dewatered Gilsonite from the 72-mile pipeline leading back to the mines at Bonanza, Utah, and the other of "green" coke from the delayed coker. What visitors saw last Friday was not the startup of an "iffy" process, but rather the proved results of a gamble that is now paying off.

Decades of Trying: The search for a practical way to upgrade Gilsonite has been going on for decades. Barber Asphalt Co.—predecessor of Barber Oil Co.,



Over-all view of plant. Pipeline at right carries molten Gilsonite.



Storage pile of dewatered Gilsonite is built by radial stacker.

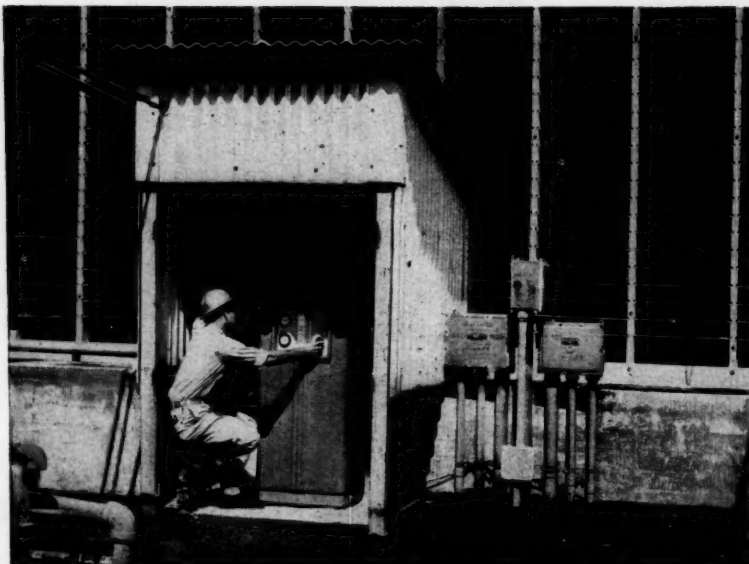
West's New Paydirt

and for many years sole owner of Gilson Asphaltum Co.—in the early '20s built an unsuccessful plant at Madison, Ill., to convert Gilsonite into gasoline and coke. It spent hundreds of thousands of dollars on research and development, but it was unable to translate laboratory successes into plant operation.

In '42, Torkild Rieber, former board chairman of The Texas Co., became president of Barber. In his Texaco days he had become well acquainted with Standard Oil of California, since the two firms col-

laborated on joint ventures, and in '46 he arranged half-and-half ownership of Gilson Asphaltum by Barber and California Standard. To the new company—renamed American Gilsonite Co.—Barber brought raw material and a background of Gilsonite experience, and Standard brought research and development know-how. Eight years and almost a million research dollars later, the process was proved in a pilot plant at Bonanza, and the idea of a commercial plant began to take shape.

Attractive Economics: Like the gold in the nearby



W&T V-notch Chlorinator installed at Esso's Baton Rouge Refinery feeds chlorine at rates up to 500 lbs./24 hr. Units are available with chlorine capacities up to 2000 lbs./24 hr.

NEW W&T V-NOTCH CHLORINATORS,

*used at Oil Refineries, are rugged,
easy to operate and moderately priced.*

Esso Standard Oil Co. has a W&T V-notch Chlorinator installed at their Baton Rouge, La., Refinery. The chlorinator, installed in a small shed open to the sun and weather, chlorinates cooling water for slime control.

This type of installation would be considered rugged service for other equipment but V-notch Chlorinators are designed for such use. They are made of materials that are completely resistant to corrosion as well as weather. They are simple to operate and to maintain. In addition, W&T V-notch Chlorinators are an attractive piece of equipment, colored green to fit into industrial color schemes.

For more information about W&T V-notch Chlorinators, send for bulletin CD-44.



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PRODUCTION

mountains, the secrets of successful Gilsonite processing were hard to discover; but as in the case of gold, the payoff well justifies the effort.

Processing of 700 tons/day of Gilsonite yields 54,600 gal. of gasoline worth about 12¢/gal. and 275 tons of calcined coke at about \$30/ton. This figures out to about \$5 million annual sales.

But probability is strong that the capacity of the pipeline can be doubled, in which case annual sales could rise to \$10 million.

Crude oil today sells for more than \$3, delivered to the refinery. The equivalent quantity of Gilsonite can be brought to the Colorado refinery for "substantially less than \$2," says American Gilsonite President Ernest Goodner.

Proved mineable deposits of Gilsonite will last almost 70 years at the present usage rate, so there's no problem of the plant's outlasting its raw material supply.

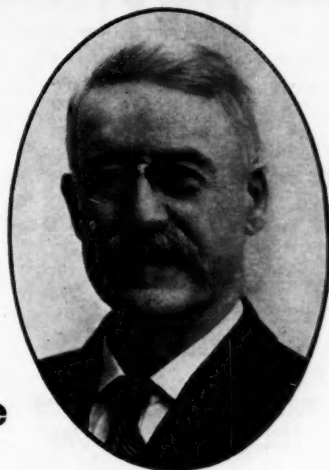
The plant facilities are costly in comparison with conventional petroleum refineries, but the Gilsonite installation is less susceptible than most to the vagaries of demand. For one thing, the gasoline enjoys an advantage over that from other refineries in the ready-to-hand western Colorado market. For another, the calcined coke—a primary product of the plant and not simply an unavoidable by-product—is, in the company's words, "the purest form of commercially available carbon." Almost sulfur-free (0.25% maximum), the high-purity product is priced competitively with petroleum coke for aluminum and stainless-steel metallurgy, but Goodner believes that it could command a premium.

'Gilsochemicals' Next? The present refinery is only one of many possible tools for exploiting the chemical values of Gilsonite. The raw mineral has various uses (insulation, inks, floor tile, brake linings, etc.), but rising production and transportation costs have priced it out of many former markets. The new refinery products may be only an initial step in the development of a "gilsochemical" family, thinks Goodner. What those gilsochemicals might be is anybody's guess, but the company is conducting research, looking for ways to tear the resinous asphaltite apart and synthesize chemicals based on its unique chemical structure,

Another Graver Contribution to American Industry 1857-1957

IN 1884...73 YEARS AGO...

They Scoffed at Wm. Graver's Determination to Build Storage Tanks with Light Plate



Quoted from an article "Graver Tanks Are Monuments to Confidence, Energy and Skill," The Southwestern Oil Journal, December 5, 1919:

“ . . . It had been the theory of Chicago tank builders that tanks should be constructed like boilers—made of heavy material and capable of standing a great pressure. Mr. Graver could erect his tanks much cheaper than those being put up by the Chicago concerns, but he was unable to get his just share of the business. He took contracts for other kind of work and his perseverance was finally rewarded by a contract to build four linseed tanks of considerable size for a Chicago concern. Failure was predicted by his competitors and Joseph T. Ryerson, from whom he was purchasing the material, also became skeptical of the outcome.

Having called Mr. Graver into conference and being assured that he had successfully constructed the lighter tanks for the Standard Oil Company, Mr. Ryerson gave the oil com-

pany his word that the tanks would fill all requirements and Mr. Graver was allowed to go on with the contract. William Graver, his son, J. P. Graver, now president of the company and Mike Sheets, the construction foreman, got the material out for the tank at their plant in Clark street.

The tank trade was especially interested in the construction of the tanks and they gathered daily to watch the erection. Gloomy predictions were voiced from the laying of the bottoms to the completion of the tanks. However, William Graver had his day when the first tank was tested out. A large crowd was on hand to see the tank filled up, and as the gauge on the tank soared and it still held, many of his competitors turned on their heels, wiser apparently in tank construction.

It was upon the completion of this tank that William Graver began to reap the fruit of his labor. Orders came pouring in and from that day to this the Gravers have been favored with a large share of the tank business.”

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PRODUCTION

EQUIPMENT

Space Compensator: Philip J. Hill & Son (Tulsa, Okla.) offers its Compensating Cartridge for processes requiring compensation for loss in cubic area caused by the dissipation of a solid or granular chemical in the process stream. Example: dehydration of natural gas or air where the unit enables dew points to be depressed more than 100 F. Void in the desiccant bed is taken up by the cartridge spring. Sizes: 2 in. in diameter x 6 in. long to 14 in. diameter x 36 in. long.

Vented-Cover Pumphead: To eliminate the dangers caused by back pressures, Waukesha Foundry Co. (Waukesha, Wis.) is out with a vented-cover pumphead for all sizes and models of its positive displacement pumps. When head pressure becomes excessive, it exerts a pressure in a sealed chamber, stops or slows the product flow. Pneumatic type introduces control as fine as 1 psi. on back pressures. Manual type is recommended for applications where a minimum of 4-5 psi. differential is satisfactory.

Rotary Joint: Phillips Sales Co. (West New York, N. J.) claims that its new Exacto rotary joint (for service on dryers, mills, etc.) will not freeze on the roll at steam pressures up to 250 psi., temperatures to 500 F, speeds to 1,000 rpm.

Flow Indicator: Process flows below ordinary rotameter range can be measured with The Foxboro Co.'s (Foxboro, Mass.) new Type 13A d/p Cell Transmitter. Minimum range: 0.003 to 0.010 gpm. of water and similar liquids, 0.010 to 0.040 cfm. of air and other gases. Six standard orifices (0.020 to 0.250 in.) are offered.

Flow-Measuring System: An inexpensive electronic flow-measuring system for liquids and gases is a new development of Computers, Inc. (Houston, Tex.). The system is said to provide the range, accuracy and speed of response comparable to other electronic systems at a price competitive with mechanical systems. How it works: flow rate through an orifice plate is converted into electrical signals proportional to rate and accumulated flow. Accuracy is within 1% of full-scale output with a flow of 20% or more of full scale. Long-term accuracy: better than 0.25%.

Data Processing: The ElectroData Division of Burroughs Corp. (Pasadena, Calif.) is introducing a new 10-speed magnetic tape transport for electronic data-processing systems. The unit has a speed ratio of 60:1, selects any of 10 tape speeds by remote or local control. Speeds: 1.5, 2.25, 3, 4, 5, 9, 15, 22.5, 30, 45 and 90 in./second. The transport uses ¾-in. tape, wound on two 10½-in. reels.

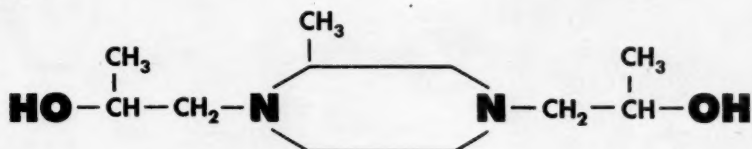
Coating Formulations: American Latex Products Corp. (Hawthorne, Calif.) is out with a new 1900 series of Stafoam polyurethane formulations for spray-gun coating of flat or contoured surfaces. Stafoam is applied with DeVilbiss catalyst-type equipment, foams in place to between ½ and 2 in., as desired. Densities available: 2-20 lbs./cu.ft., in rigid and semirigid forms. For thermal insulation, k factor (thermal conductivity) is 0.19 for 1-in. thickness, 2.5-lb./cu.ft. density, at temperatures from near absolute zero to 200 F.



NEW CHEMICAL INTERMEDIATE ANNOUNCED

This news bulletin about Wyandotte Chemicals services, products, and their applications, is published to help keep you posted. Perhaps you will want to route these and subsequent facts to interested members of your organization. Additional information and trial quantities of Wyandotte products are available upon request . . . may we serve you?

A versatile, new chemical intermediate, derived from 2-methylpiperazine, was introduced recently by Wyandotte Chemicals Corporation. Chemically, this new material is 1,4-bis-(2-hydroxypropyl)-2-methylpiperazine represented by the following molecular structure:



This dihydroxy-2-methylpiperazine, which we call "DHP-MP" for short, is a semi-viscous, water-miscible liquid with a boiling point of 145°C. at 3mm Hg.

One application for this product that has already proven successful is in the production of polyurethane foams. Here, "DHP-MP" serves as an odorless catalyst. It can be used as a replacement for other amine catalysts at the same concentration by weight, to give foams with good physical properties, including low compression set values.

Other specific areas of use as a chemical intermediate are currently being investigated.

Samples are now available for evaluation in your own laboratories. Drum quantities are available on short notice.

Write for data sheet and samples on your company letterhead. Address inquiries to Department C0 for prompt attention.

2-METHYLPIPERAZINE AVAILABLE IN SEMI-COMMERCIAL QUANTITIES

Until recently, 2-methylpiperazine (parent compound for the above derivative) has been available only in experimental quantities. Steadily increasing interest has made larger production possible. To date, this heterocyclic diamine has shown a wide range of possible applications, including: fungicides, pharmaceuticals, surface-active agents, stabilizing agents, catalysts, and chemical intermediates. Polyamides are formed by reacting the piperazine with various dicarboxylic acids. Data sheets and samples are available upon request.

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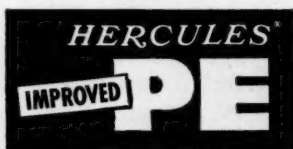
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This new plant is already producing formaldehyde, one of the major raw materials from which PE is made, and by fall of 1957 will be completely integrated through methanol production back to the natural gas pipelines. Technical PE, Improved Technical PE, and Mono-PE are all available in quantity.

The technical representative in your nearest Hercules office can tell you how this multiplant source of high-quality PE can benefit you in your search for more marketable products.



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Market Newsletter

CHEMICAL WEEK
August 10, 1957

Aluminum price increases came soon after reports that the action was imminent (*CW Market Newsletter*, Aug. 3). Aluminum Co. of America set the pattern; and Kaiser Aluminum & Chemical and Reynolds Metals followed along.

The increases, as indicated earlier, amounted to 1¢/lb. on basic aluminum pig, ingot, and billet. Prices of aluminum mill products were also raised uniformly in the industry (by approximately 4%).

The increases came despite a current easing in demand for the lightweight metal. The reasons for the price hikes, spelled out by Reynolds, are apparently applicable to all producers: operating costs (including wages, materials, freight and power rates, and taxes) have been rising to such an extent that the company must obtain partial relief through higher prices.

•
U. S. nickel users aren't getting the 1¢/lb. price cut given Canadian consumers last week by International Nickel Co. of Canada Ltd. Reason: the lower Canadian price (69¢/lb.) on electrolytically refined material is being established to "compensate for recent changes in foreign exchange rates."

Incidentally, the recent turndown of International Nickel's proposal that the U. S. government buy a substantial portion of the company's expanding nickel output (*CW Market Newsletter*, June 20) will spark a hard-selling marketing campaign by the firm.

The push may bring a concurrent cut in the U. S. nickel selling price (now about 74¢/lb. including a 1¼¢/lb. U. S. import duty paid by the company), but don't look for the reduction soon. Nickel won't really be in ample supply for at least a year or two.

•
Caffeine prices have just been reduced to the lowest level in 17 years. And behind the latest 50¢/lb. slash—which brings the domestic tag on the important drug and flavoring ingredient down to \$2.50/lb.—are two potent pressuring factors: competition from a rising wave of imports; repeated reductions in the U. S. tariff.

Monsanto, in posting the new price drop (the second major caffeine cut in two years), frankly labels the move as "an effort to regain sales" lost to foreign material pouring into U. S. markets. Imports are currently coming in at a rate of more than 660,000 lbs./year—some two and a half times larger than '54 imports. Estimated U. S. consumption: 1.8 million lbs./year.

A series of reductions over the years has brought U. S. tariff on caffeine down, from \$1.25/lb. (prior to 1936) to 54¢/lb., the rate that went into effect July 1 of this year. An additional 5% reduction, under terms of tariff concessions already made, is slated for July 1, '58.

Market Newsletter

(Continued)

One major casualty of the caffeine battle resulting from lowered tariffs, Monsanto points out, was the closing (in June '57) of its Norfolk, Va., plant. The installation, says the firm, cannot be converted conveniently to other chemical manufacture, is idle and for sale.

There'll be a 25% tariff on all sulfur imports—including “cut rate” Mexican material being “dumped in large quantities” into the U.S.—if Rep. F. Edward Hebert (D., La.) has his way. The New Orleans Congressman, introducing the measure (H.R. 8949) last week, said the import tax is necessary to protect the U. S. sulfur industry in Texas and Louisiana. Sulfur sales there, he said, have “fallen off materially.”

Hebert further said that Mexican sulfur is being produced with cheap labor and cheaper shipping costs than U. S. producers face, causing the Mexican companies, subsidiaries of U. S. corporations, to be able to undersell the U. S. product.

Published comment by one Texas sulfur company with interests in Mexico, implies that Hebert's proposal may have been politically inspired because of Louisiana's prominence in sulfur production.

Pharmaceutical imports into West Germany are growing at a rate faster than that country's exports. Says the Assn. of German Chemical Industry: pharmaceutical exports during the first three months of '57 increased about 21% (to \$29.3 million), while imports jumped 63% (to \$10.1 million). Reason: “complete lack of restrictive regulations for pharmaceutical imports.”

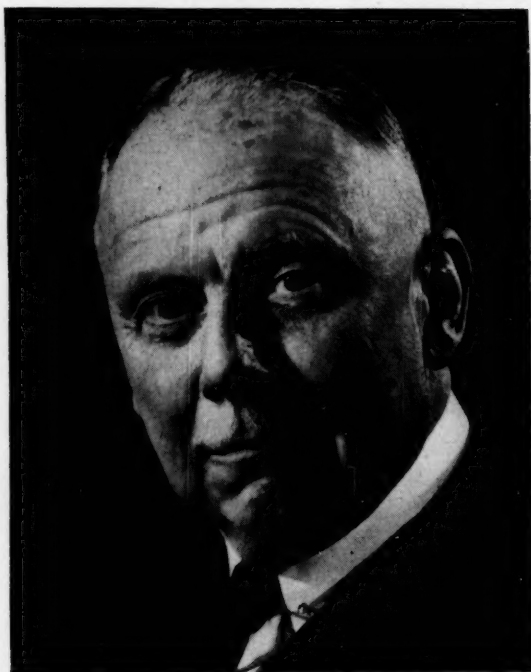
Vigorous growth ahead for U. S. pulp, paper and board industry. That's the conclusion spelled out in the first study ever prepared by the U. S. Dept. of Commerce for public use on projected future supply and demand of the industry, in terms of principal products. For instance: total paper and board production by '65 is expected to top last year's output of nearly 31.4 million tons by some 40%.

Copies of the 218-page report, just issued by a Congressional Committee, are available from the Superintendent of Documents, Washington 25, D.C., at 55¢/copy. A technical guide to the committee's statistics may be obtained from the Office of Publications, U. S. Dept. of Commerce, at 40¢/copy.

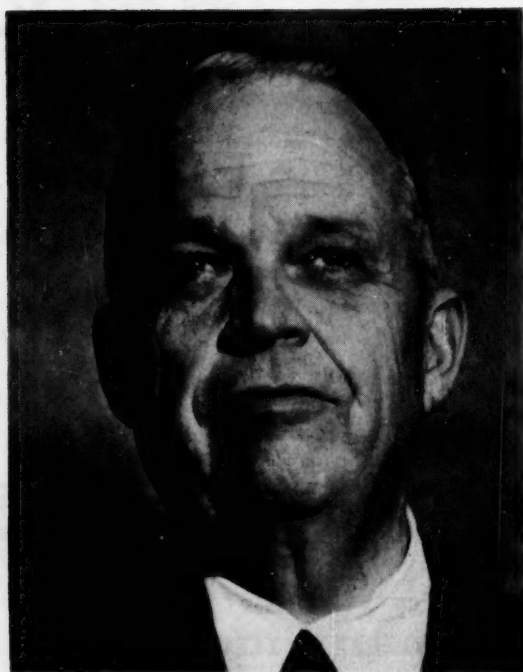
SELECTED PRICE CHANGES — WEEK ENDING AUGUST 5, 1957

UP	Change	New Price
Aluminum metal, pigs, 10,000-lb. lots, frt. all'd., lb.	\$0.01	\$0.26
Carnauba wax, chalky, bgs., ton lots, lb.	0.01	0.68
DOWN		
Caffeine, anhyd., USP, syn., cryst., dms., 100-lb. lots or more, lb.	0.50	2.50
Hydrogen cyanide, liq., 98%, tanks, wks., lb.	0.04	0.16

MARKETS



AGAINST: James H. Stebbins (W.R. Grace & Co.) A zinc/lead excise tax would be 'harmful and short-sighted.'



FOR: Sen. Robert S. Kerr (D., Okla.) '... height of stupidity' to encourage low-tariff imports that hurt domestic producers.

Day of Reckoning Arrives for Zinc Industry

The economic time-bomb that the U.S. zinc industry has been sitting on has at long last exploded—and it's the Senate Finance Committee's unenviable job to go in and restore order out of chaos. But whatever solution the committee hits on, someone is bound to complain loud and long that a disastrous economic fallout will follow.

Dire warnings now echoing across the committee chamber, on the one hand, point to possible extinction of the U.S. zinc industry, and on the other, to the inevitable undermining of national security through economic alienation of our foreign friends. Though the heated debate is likely to provoke degrees of exaggeration on all sides, it's clear that the problem can no longer be ignored. The Senate Finance Committee must find a reasonable compromise—and it must find it soon.

Stockpile Dilemma: Three factors—

large zinc imports, curtailed U.S. production, skidding domestic prices—set the explosive charge that has now been touched off by the probability of a near-future termination of the government's zinc and lead stockpiling.

So long as the government remained a good customer for zinc, the inevitable crisis was postponed. It's evident now, however, that government zinc bins are full, and the problem of keeping the U.S. zinc industry on its feet has been shoved into Washington's front office. An easy way out would be to continue buying the metal even though the government has enough stored away—but such subsidies are hard to justify to taxpayers and could turn into political boomerangs.

Hence, the Senate Finance Committee is considering an Administration-sponsored bill that would impose a sliding scale of excise taxes on zinc imports (also on lead, which is in a

similar predicament) in order to stabilize U.S. prices for these metals.

The proposed taxes would range from ½ to 2¢/lb., and would automatically become effective when domestic zinc prices fall below 14.5¢/lb. (The tax range for lead would be from 1 to 3¢/lb., applicable when domestic lead prices drop below a 17¢/lb. threshold.)

If the bill is passed soon, the new taxes will go into effect immediately, because lead is now selling at 14¢/lb., and zinc tabs recently (*CW Market Newsletter*, July 20) sagged to a low 10¢/lb.

Meanwhile, the government's Business & Defense Services Administration is bolstering the depressed lead and zinc market—purportedly taking advantage of depressed prices—by continuing stockpile purchases; but it's obviously a hand-to-mouth emergency measure in behalf of the industry, and may be partly stimulated

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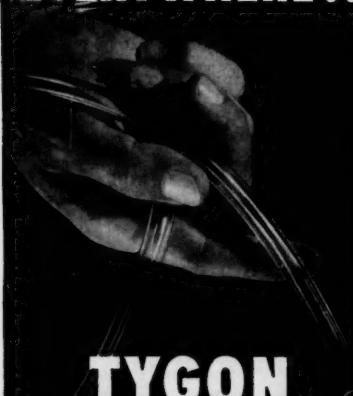
Call your nearest J&L Container Division office for recommendations on your packaging problems. Or write direct to the Container Division, 405 Lexington Avenue, New York 17, N. Y.



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389-E

PLASTICS AND SYNTHETICS DIVISION

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MARKETS



AGAINST: Jean Vuillequez (American Metal Co., Ltd.) "... a revenue bill designed to enrich the U.S."

by the need to forestall a bigger crisis while the Senate Finance Committee tries to find a workable solution of the problem.

Battle for the Bill: There's ample ammunition for senators from U.S. mining areas who favor the bill because they foresee "the death of these industries" if relief in the form of higher tariffs isn't provided soon.

They can cite, for example, American Smelting & Refining's recently announced 3,000-tons/month cutback of zinc production (including a 500-tons/month cutback of lead output); the curtailments caused the closing of three mines (in Washington, Colorado and New Mexico), and the suspension of mill operations in New Mexico.

Hard on the heels of this first announcement came another from the same firm saying that production of special high-grade zinc at Corpus Christi, Tex., would be reduced by 30%. The reduction is being accomplished by suspension of zinc fume shipments from the company's smelter at Chihuahua, Mex. This 30% reduction amounts to some 2,700 tons a month of zinc, and represents about 8% of total U.S. monthly output. Reason given for the drastic cutbacks was the recent 3¢/lb. drop in zinc prices, which was caused by reduced requirements of the automotive and appliance industries, and by decreased sales to the government stockpile.

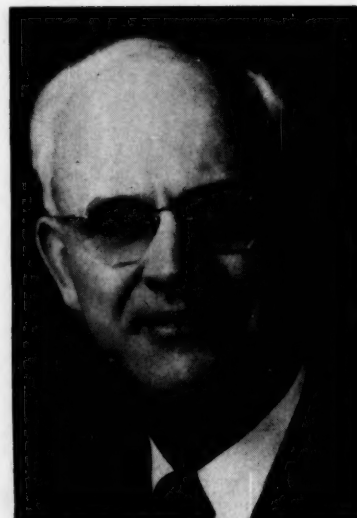
New Jersey Zinc, too, made public

its intent to shut down its Sterling Hill, N.J., mine in mid-August. Output of the mine is about 1,800 tons a month of zinc metal. But unlike American Smelting, officials of New Jersey lay blame for depressed prices and production curbs at the doorsteps of importers, and urge government measures to control "exploitation" of the domestic market by foreign producers.

U.S. zinc and lead production slow-downs aren't, of course, limited to these two producers. Vociferous senators, fighting in behalf of the U.S. lead and zinc industries, point to many past (and some imminent) mine closings in Colorado, and aver that a "pall of depression" hangs over Idaho mining areas.

Opposition Outcries: Spokesmen for the National Council of American Importers have labeled the proposed excise tax bill a "domestic price support program" that will be financed by U.S. importers rather than by the government. To tack the new taxes onto the established tariff structure would, they argue, have the further unhappy effect of encouraging demands for similar treatment by other industries (thereby, it's implied, create more problems for importers).

A flank attack against the bill was made by Jean Vuillequez, vice-president of sales of American Metal Co., Ltd., who says passage of the bill



FOR: Sen. Arthur V. Watkins (R., Utah) Domestic producers are 'just about ready to throw in the sponge.'



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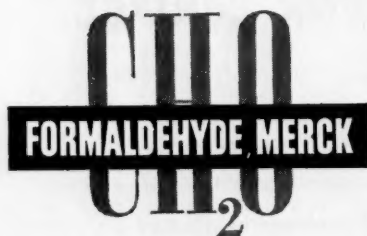
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RAHWAY, NEW JERSEY

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MARKETS

would hurt national security, create a "windfall" for big U.S. mines and, in the long run, actually hurt U.S. zinc and lead producers. His counter proposal: government subsidies coupled with a permanent stockpiling program.

Here's how Vuillequez backs his contention that the proposed tax bill would injure rather than help the proponents of the legislation:

Exporters to the U.S. would tend to withhold supplies when the tax is high and increase them when the tax is low or completely removed. This would mean that the prices of these metals would fluctuate widely, create frequent periods of shortage and oversupply, lead to loss of consumer confidence. The result: a tendency to shy away from use of lead and zinc.

Lead and zinc consumers, says Vuillequez, have already been critical about the wide fluctuations in the prices of lead and zinc. But these fluctuations were not due to policies of importers or of domestic producers, were instead caused by other conditions (i.e., the Korean War, stockpiling policies, on-again-off-again purchase programs against sales of surplus agricultural products).

Also against the bill is James H. Stebbins, executive vice-president of W. R. Grace, who considers the bill "short-sighted," says it would harm Latin American producers. These countries, he predicts, might resort to a reciprocal action of curtailing consumption of American products.

Overseas Reactions: That foreign countries look askance at the fight raging in the Senate Finance Committee is evidenced by comments of British observers. Says *The Economist* (July 6, p. 51), the "spoon-fed prosperity of lead and zinc mining industries is turning sour." Noting that lead and zinc prices have slumped badly in England, *The Economist* points an accusing finger at Washington by saying "the U.S. government, after bolstering world production for three years, is now seeking less costly means of protecting its own producers [without saddling the taxpayer with a perpetual program.]"

By keeping world prices "artificially high," they add, and encouraging world production inside and outside the U.S., foreign production has grown into a greater threat to the prosperity of American mines than it was before

the support program was put into effect in 1954.

Critical Introspection: But you don't have to look overseas to find strong criticism of the government's zinc-stockpiling program. A few weeks ago, George S. Brady, materials consultant for the National Assn. of Purchasing Agents, expressed similar views at the association's annual convention in Atlantic City.

Said Brady, "The industry has placed itself in a position that is unhealthy for the long-term economy. Using the industry's own arguments for a huge stockpile to protect a 'strategic' position that actually does not exist, government advocates of the stockpile have indulged in a spending spree, building up immense stocks of imported metal", using the argument that the purchase of foreign metal helps the foreign aid program in a thinly disguised effort to effectively balance the market."

"This artificial balancing at the taxpayers' expense," adds Brady, "also has the bad feature that it tends to destroy within the industry all incentive toward healthy improvement of processes and methods, and all incentive to develop means for utilizing domestic low-grade ore."

He supports this thesis by noting that the increasing use of zinc chemicals for paints, coatings, preservatives, rubber chemicals, phosphors, etc., has brought this category into third place in zinc usage and has more than compensated for losses in older uses; but the record shows that it was the vigorous, research-minded chemical industry—rather than the zinc industry—that has been responsible for the trend. The newer zinc-containing alloys, too, have been largely developed outside the zinc industry.

Thus, the Senate Finance Committee is obviously caught in an uncomfortable cross-fire between critics of the government's stockpile program and those who equate passage of the new tax bill with an undermining of national security. And there's no chance to sit this one out until the whole awkward situation blows over; a decision will be made—but it won't necessarily mean that the shooting is over.

*Since mid-'54, the government has been stockpiling domestic lead and zinc; since mid-'56, until just recently, it has also taken surplus foreign lead and zinc against the barter of surplus U.S. farm products.

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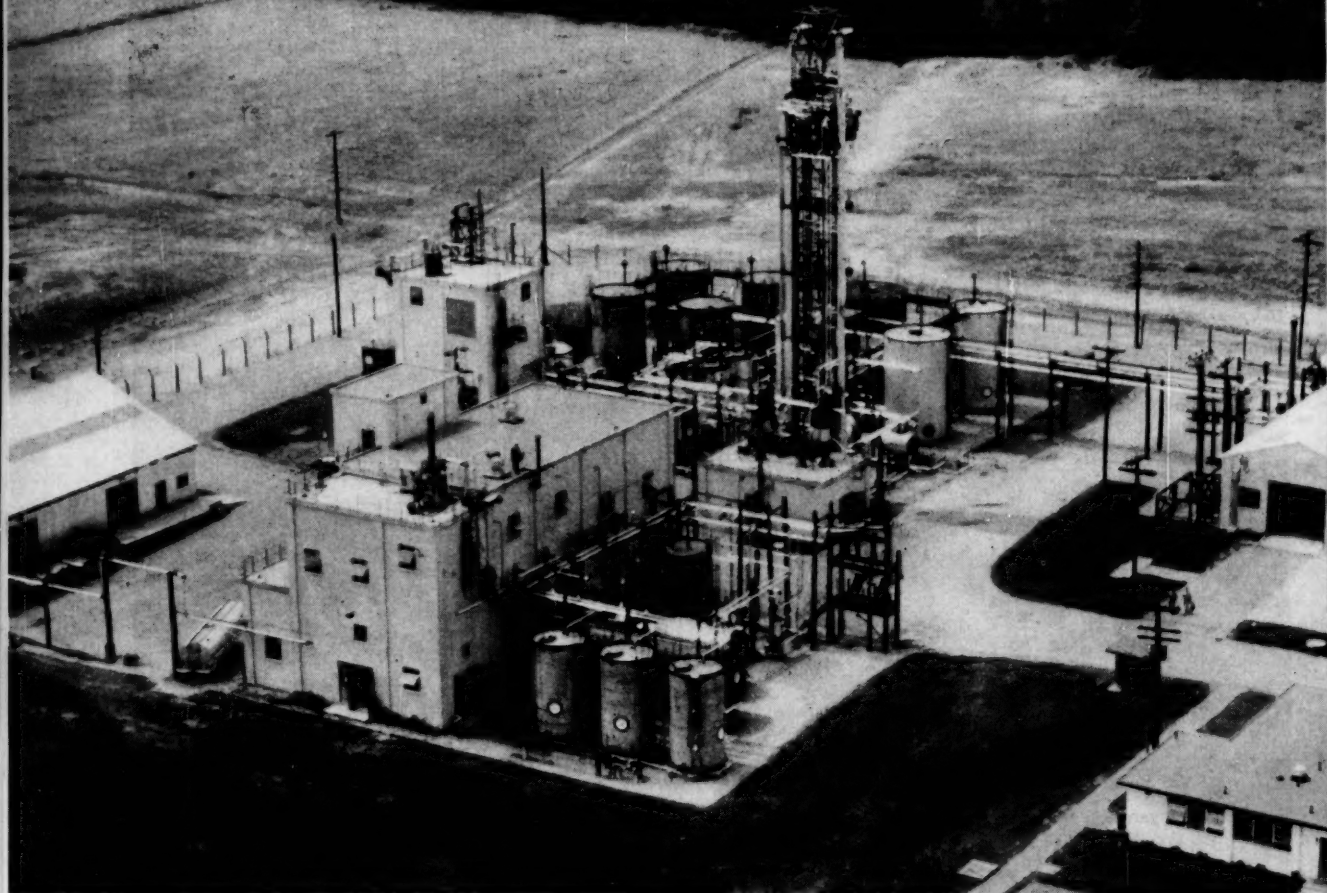
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ENGINEERING



Koppers' new Arroyo niacin unit (foreground) and semiworks separation facility are . . .

Double Vote of Confidence in Coal

As Koppers dedicated its new commercial niacin plant and coal-tar development unit in Arroyo, W. Va., recently, it left no doubt about one point: Koppers and coal, which have been happily married for years, have no intention of splitting up now.

The two units represent an investment of more than \$2 million. The commercial facility, which marks Koppers' initial venture into the pharmaceutical field, is a 500,000-lbs./year plant for the production of niacin from quinoline. The development unit: a 1-ton/day semiworks plant employing new separation techniques for the economic recovery of such coal-tar constituents as phenanthrene, anthracene and carbazole.

Koppers' niacin entry is a substantial

boost for quinoline, which lost some ground a few years ago when an alternate route to niacin from 2-methyl, 5-ethylpyridine (MEP) made its commercial debut. (*CW*, Sept. 1, '51, p. 15). The two leading niacin producers in the U.S. now are Merck & Co. and Allied's Barrett Division.

Merck makes the compound from MEP; Barrett, like Koppers, has ready access to coal tar, produces it from quinoline. The 500,000-lbs./year Arroyo plant will make Koppers the third-largest producer, will account for about 20% of the national production.*

Modified Process: The process employed at Arroyo was developed and

*U.S. Dept. of Commerce reported a total of 2,318,000 lbs. for U. S. production of niacin and niacinamide last year.

piloted by the research department of Koppers' Tar Products Division; the plant was designed, engineered and erected by the company's Engineering and Construction Division.

Before settling on the quinoline route to niacin, Koppers also tried the MEP approach, decided it had no advantage over the coal-tar starting material. But, on the theoretical basis of 100% conversion, MEP (43-45¢/lb.) should yield about 6.75% more niacin than an equal weight of quinoline (about 50¢/lb.).

Essentially, the process consists of a standard oxidation of quinoline to convert it into pyridine-3-carboxylic acid. Koppers' contribution: a new technique for purifying the niacin product. The quinoline is first sul-

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PHYSICAL PROPERTIES

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Intermediate Surface Area Type A	45-50%	28-30%	1.65-1.70 gr/cc	58 lbs/ft ³ (Approx.)	Quartz, Alpha, Gamma Alumina — chiefly Gamma Alumina	60-70m ² /gram
Type B	45-50%	28-30%	1.65-1.70 gr/cc	60 lbs/ft ³ (Approx.)	Quartz, Alpha, Kappa, Delta Alumina	20-30m ² /gram
Type C	45-50%	28-30%	1.65-1.70 gr/cc	62 lbs/ft ³ (Approx.)	Alpha Alumina and Mullite	5-10m ² /gram
Low Surface Area	10-50%	3-25%	1.90-3.15 gr/cc	65-80 lbs/ft ³	Alpha Alumina and Mullite	Less than 1m ² /gram

Some Of Many Applications

Suggested Applications For Intermediate Surface Carriers include catalytic reforming, dehydrogenation, dehydration, sulfuric acid manufacture, nitric acid manufacture and dessicants.

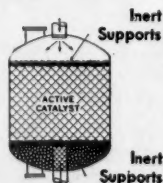
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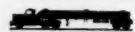
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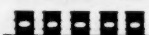
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ENGINEERING

fonated continuously to produce quinoline-8-sulfonic acid, then oxidized with nitric acid, which chews up the benzene ring. The modified purification step apparently involves the addition of 8-sulfonic acid from the sulfonation step to help spring free the nicotinic acid (niacin).

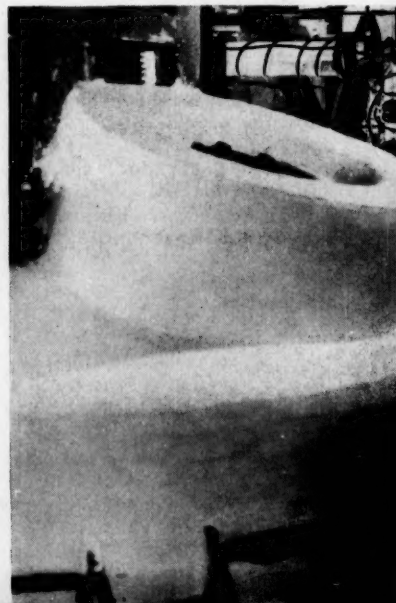
In addition to niacin, Koppers has pilot-produced two other quinoline-base products that can be made at Arroyo with some increase to the present plant. One is niacinamide—a derivative of the present product; the other, 8-hydroxy quinoline used for mildewproofing of fabrics.

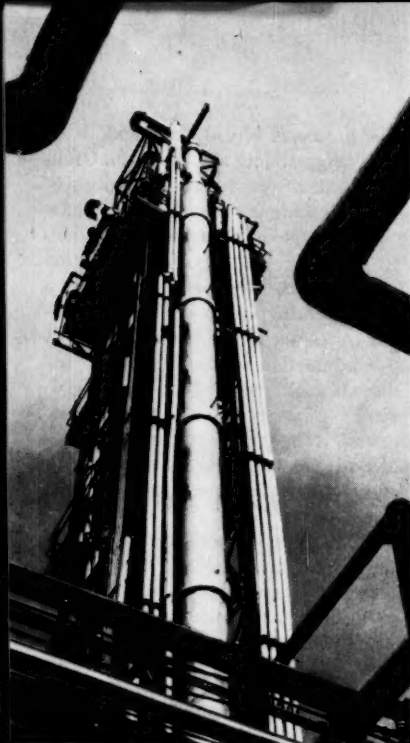
Upgrading the Tar: Twofold goal of Koppers' semiworks plant: to develop economically feasible methods of recovering commercial quantities of the higher-boiling coal-tar chemicals, to produce such chemicals in sufficient quantity for market exploration and development.

To date, recovery of coal-tar chemicals has been generally limited to those compounds that can be distilled off below 500 F. By tapping the fraction that comes off between 500 and 700 F, Koppers hopes to uncover more useful chemicals that will upgrade the value of tar to coal-tar producers.

For example, quinoline, which comprises only 0.25% of the crude tar selling for 1½¢/lb., is priced at about 50¢/lb., can be made into niacin worth about \$3.50/lb. The three high-boiling compounds to be produced initially in the semiworks plant account for 5-7% of the total tar, there-

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Separation Problems: Because of the relatively small amounts of specific chemicals in the crude tar, the physical size of separation facilities is a major consideration. The narrow boiling-point range of the products is another complication, requires the use of fractional crystallization techniques for final separation of the individual products.

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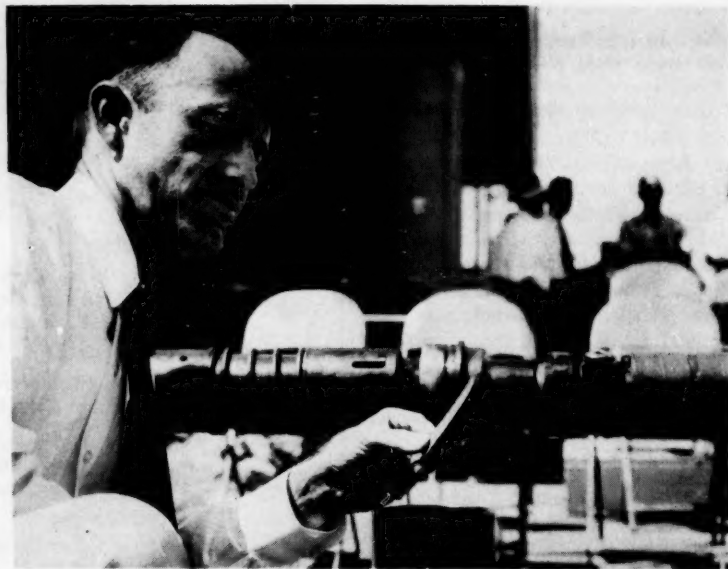
designed its semiworks plant as a group of basic distillation and crystallization process units—the nucleus around which other equipment required for the production of developmental quantities can be assembled as the work progresses. Initially, it will process creosote, supplied by the Tar Products Division's Follansbee plant, to recover phenanthrene, anthracene and carbazole.

An incidental advantage of removing these three cuts, says Koppers, is the upgrading of the creosote. Because they tend to crystallize under certain conditions, phenanthrene, anthracene and carbazole often complicate pressure treating procedures. And since they do not contribute to the desirable physical properties of creosote, removal of the PAC fractions actually produces a superior product.

Uses Sought: With technically feasi-

ble processes already in hand, Koppers' biggest job will be to find suitable outlets for volume quantities of the new coal-tar chemicals. In phenanthrene, it sees potential applications in cellulose coatings for protection against light, in paper size and as a plasticizer in plastic insulating material. Anthracene was formerly used in the production of anthraquinone for the manufacture of dyes, is not currently competitive with other raw materials for this use. Carbazole's only commercial application at present is as an intermediate for certain light-fast dyes.

If Koppers succeeds in making these little-used coal-tar chemicals available in quantity at an attractive price, chances are that chemical producers, with their customary resourcefulness, will find new ways of using them.



Propellent Payoff for Oil Industry

The chemical process industries' contribution to the nation's rockets and missiles program is beginning to pay dividends to industry as well as to the military. One of the first non-military dividends, making its debut this week, is a solid propellant-activated tool designed by B. J. Service, Inc. (Long Beach, Calif.), for oil well fracturing operations. The device burns crescent-shaped cakes of rubber-base propellant made by Grand Central Rocket Co. (Redlands,

Calif.), delivers 5,000 hydraulic horsepower at a cost of 8-10¢/hp. Power generated by surface pumping units generally cost approximately \$1 to \$1.25/hp.

And as GCR's Douglas Melcer demonstrates above, the slow-burning fuel is safe to handle even after it has been ignited. Thiokol Chemical Corp. (Trenton, N. J.) is doing considerable research on solid propellants for industrial use (CW, June 5, '54, p. 64).

CHEMICAL WEEK • ADVERTISERS INDEX

August 10, 1957

AIR REDUCTION CHEMICAL CO. 36 Agency—G. M. Basford Co.	JONES & LAUGHLIN STEEL CORP. 75 Agency—Ketchum, MacLeod & Grove, Inc.	U. S. STONWARE 76 Agency—Ralph Gross Adv. Inc.
ALLIED CHEMICAL & DYE CORP. NITROGEN DIV. 16 Agency—G. M. Basford Co.	KELLOGG CO., THE M. W. 3rd Cover Agency—Fuller & Smith & Ross, Inc.	VOGT MACHINE CO., HENRY 77 Agency—Farson, Huff & Northlich, Adv.
AMERICAN MINERAL SPIRITS CO. 52 Agency—Leo Burnett Co., Inc.	LINDSAY CHEMICAL CO. 53 Agency—C. Franklin Brown, Inc.	WALLACE & TIERNAN INC. 66 Agency—Branstater Inc.
AMOCO CHEMICAL CORP. 37 Agency—D'Arcy Adv. Co.	MERCK & CO. INC. 78 Agency—Charles W. Hoyt Co. Inc.	WEST END CHEMICAL CO. 8 Agency—Norton M. Jacobs Co.
BAKER CASTOR OIL CO. 47 Agency—Doyle, Kitchen & McCormick Inc.	MUTUAL CHEMICAL DIV. ALLIED CHEM & DYE CORP. 19 Agency—G. M. Basford Co.	WYANDOTTE CHEMICAL CORP. 44-45, 69 Agency—Brooke, Smith, French & Dorrance Inc.
BALTIMORE & OHIO RAILROAD 59 Agency—Richard A. Foley Adv.	NORFOLK & WESTERN RAILWAY 39 Agency—Houck & Co. Inc.	ZINK CO., JOHN 83 Agency—Edward Spilman, Inc.
BOARDMAN CO., THE 42 Agency—Erwin, Wasey & Co.	NORTON CO. 81 Agency—James Thomas Chirurg Co.	
BUCKEYE CELLULOSE CORP. 63 Agency—Greenhaw & Rush, Inc.	OXY-CATALYST, INC. 53 Agency—Gray & Rogers Co.	
CELLOFILM INDUSTRIES INC. 68 Agency—Richard Lewis Adv.	PATTERSON FOUNDRY & MACHINE CO. 15 Agency—Downing Ind. Adv.	
CHEMICAL MANUFACTURING CO. 84 Agency—The House of J. Hayden Twiss	PETRO-CHEM DEVELOPMENT CO. INC. 79 Agency—Sam J. Gallay Co. Adv.	
CHURCH & DWIGHT CO. INC. 82 Agency—J. Walter Thompson Co.	PFIZER & CO., INC. CHARLES 25 Agency—MacManus, John & Adams Inc.	
COLTON CHEMICAL CO., DIV. OF AIR REDUCTION CO., INC. 38 Agency—W. N. Gates Co., Inc.	RELIANCE STEEL PRODUCTS CO. 6 Agency—Bond & Starr, Inc.	
COSDEN PETROLEUM CORP. 31 Agency—Womack-Snelson, Adv.	RHEEM MFG. CO. 49 Agency—Campbell Ewald Co., Inc.	
DAVIES NITRATE CO. 82 Agency—Severance & Brady, Inc.	SHELL CHEMICAL CORP. 73 Agency—J. Walter Thompson Co.	
DELHI-TAYLOR OIL CORP. 2 Agency—Sam J. Gallay Adv.	SHELL OIL CO. 9 Agency—J. Walter Thompson Co.	
DOW CHEMICAL CO. 33, 43 Agency—MacManus, John & Adams Inc.	SILICONES DIV. OF UNION CARBIDE CORP. 26 Agency—J. M. Mathes, Inc.	
DOWELL INC. 1 Agency—Rives, Dyke & Co. Adv.	SOLVAY PROCESS DIV. ALLIED CHEMICAL & DYE CORP. 2nd Cover Agency—Atherton & Currier, Inc.	
DU PONT de NEMOURS INC. E. I. ORGANIC CHEMICAL DIV. 51 Agency—N. W. Ayer & Son Inc.	SOUTHERN STATES IRON ROOFING CO. 4 Agency—George & Glover Adv.	
ESSO STANDARD OIL CO. 29 Agency—McCann-Erickson Inc.	STEPAN CHEMICAL CO. 11 Agency—Frank C. Nahser, Inc.	
FEDERATED METALS DIV. AMERICAN SMELTING & REFINING CO. 46 Agency—John Mather Lepton Co.	STRAN-STEEL CORP. DIV. NATIONAL STEEL CORP. 58 Agency—Campbell-Ewald Co.	
FISHER CHEMICAL CO., INC. 5 Agency—Freitwald & Coleman Co.	TAYLOR FORGE & PIPE WORKS 12-13 Agency—Marsteller, Rickard, Gebhardt & Reed, Inc.	
GENERAL AMERICAN TRANSPORTATION CORP. WIGGINS DIV. 57 Agency—Edward H. Weiss & Co.	TRUBEK LABORATORIES, INC. 35 Agency—Ray Ellis Adv.	
GRAVER TANK & MFG. CO. 67 Agency—Ladd, Southward & Bentley, Inc.	UNION CARBIDE CHEMICALS CO. DIV. OF UNION CARBIDE CORP. 4th Cover Agency—J. M. Mathes, Inc.	
GREAT LAKES CARBON CORP. 7 Agency—Davis-Parsons & Strommeter Adv.	U. S. RUBBER CO. 60 Agency—Fletcher D. Richards, Inc.	
HARSHAW CHEMICAL CO. 10		
HERCULES POWDER CO. 70 Agency—Fuller & Smith & Ross, Inc.		

tracers SECTION

(Classified Advertising)

F. J. Eberle, Business Mgr.

CHEMICALS: Offered/Wanted 86	
EMPLOYMENT 86	
EQUIPMENT: Used/Surplus New 86, 87	
For Sale 86, 87	
WANTED 86, 87	
MANAGEMENT SERVICES 87	
SPECIAL SERVICES 86, 87	

ADVERTISING STAFF

Atlanta 3 Robert H. Powell Rhodes-Haverty Bldg., Jackson 8-6951.	
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Pittsburgh 22 V. K. Dissette, Room 919 Oliver Bldg., ATLantic 1-4707	
San Francisco 4 William C. Woolston, 68 Post St., DOuglas 2-4600	
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PROCESSES

Boron Iodide: An improved method of making boron iodide has been reported by Siemens-Schuckert Werke AG. (Erlangen, Germany). Lithium borohydride reacts with iodine in n-hexane solution at room temperature (after elimination of air and moisture) to yield hydrogen iodide, lithium iodide and boron iodide. Dissociation of the hydrogen iodide yields more iodine, which continues the reaction, resulting in the equivalent of 150% yield (based on iodine). Product lithium iodide and unreacted lithium borohydride are separated by filtration, leaving boron iodide to be recovered from solution by vacuum evaporation.

Waste Disposal: Spent sulfite liquor is being successfully processed by horizontal soil filtration at the Park Falls, Wis., mill of Flambeau Paper Co. The method takes advantage of the fact that the bacteria which remove the oxygen-demanding organics from the liquor are more concentrated and active in the upper layers of the soil. Another advantage claimed over vertical soil filtration is reduced soil plugging. The filtration area being used consists of high, gently sloping wasteland. The spent liquor seeps from an artificial pond down through a series of shallow, relatively level ditches and dikes, disappears several hundred yards short of the river in which no residue is detected.

Plastic Spraying: A method of spraying glass-fiber-reinforced plastic resin may soon be introduced into the U.S., according to the German firm of M. A. S. Kunststoff-Vertrieb (Dusseldorf). Demonstrated recently at the British Plastics Exhibition, the spraying equipment reportedly allows cut glass fibers and plastic resins in any desired proportion to be sprayed evenly on molds or other type of surfaces. The firm reports that several U.S. companies—including General Motors and General Electric—are interested in the process.

Sintered Nylon: The Barden Corp. (Danbury, Conn.) has been licensed by Polymer Processes, Inc. (Reading, Pa.), to manufacture ball-bearing retainers by the latter's patented (U.S. 2,695,425) Nylasint process. Oil-impregnated, sintered nylon is said to minimize lubrication requirements.

CHARTING

BUSINESS

AUGUST 10, 1957

(million dollars)

42

35

28

21

14

7

0

CPI leasing of railroad cars in '56

Chemical
industry

Others

Glass, ceramics

Petroleum

Synthetic
fibers

Paper, pulp

Fats, oils

Chemicals: Top Customer for Leased Cars

Railway transportation of chemicals and allied products (e.g., fertilizers, phosphate rock, sulfur, resins, insecticides, explosives, compressed gas) adds up to millions of carloads annually. At present, about 25,000 privately owned freight cars are used for transportation of chemicals. More than 160,000 tank cars are also in service, of which 9,000 are owned by the railroads, the rest by private firms.

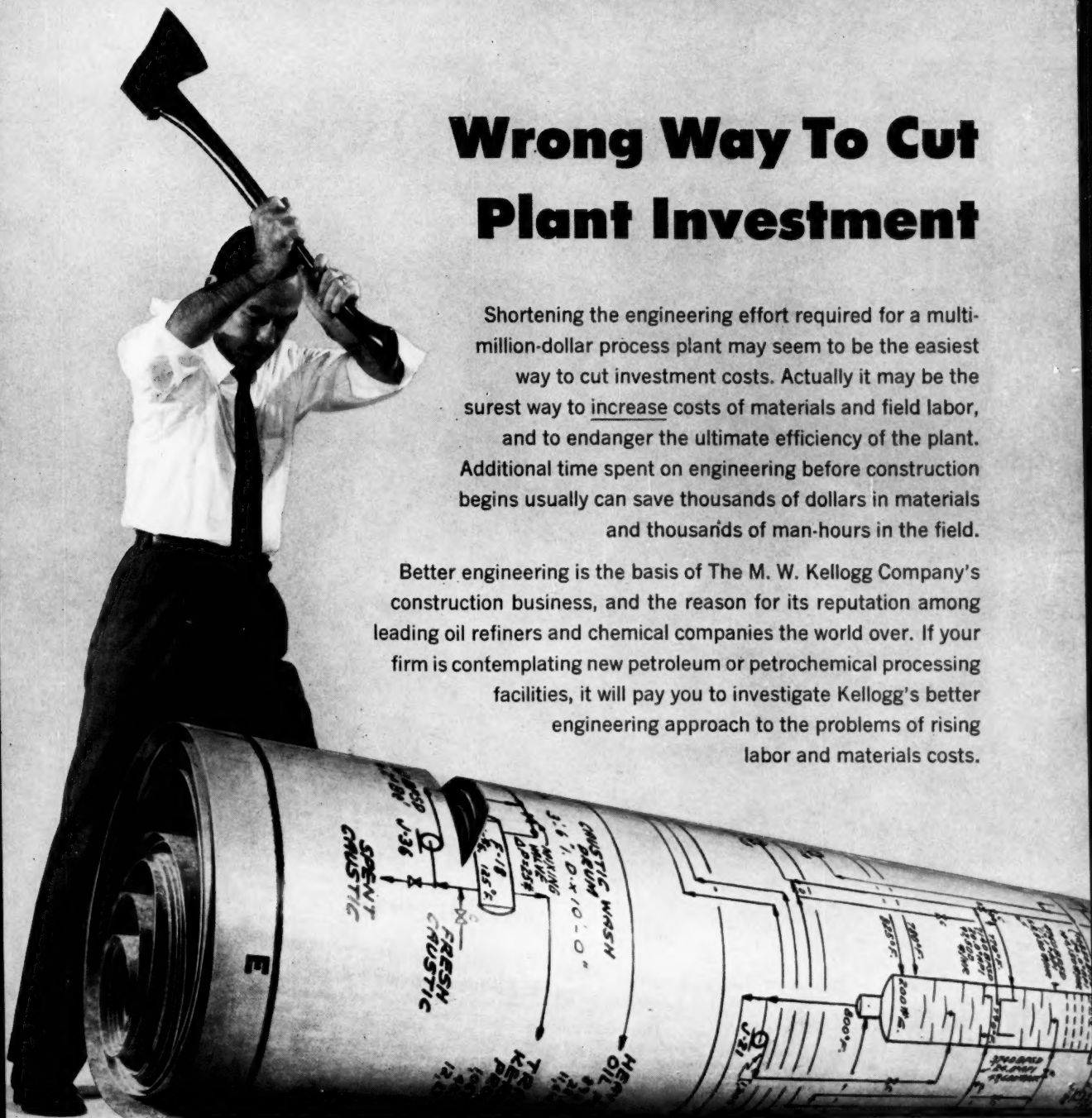
Many chemical process companies, however, find it economically attractive to lease rather than own rail-

way cars for transporting their products. An intensive survey by CHEMICAL WEEK-CHEMICAL ENGINEERING reveals that the chemical industry leads the chemical process industries in leasing of railway cars. Last year, the chemical industry spent a total of \$38 million in car-leasing—\$27 million for tank cars, \$9 million for hopper cars, close to \$2 million for box cars. The glass and ceramic industry spent \$8 million and the petroleum and synthetic fibers industries paid out \$7 million and \$6 million, respectively, for leases.

Wrong Way To Cut Plant Investment

Shortening the engineering effort required for a multi-million-dollar process plant may seem to be the easiest way to cut investment costs. Actually it may be the surest way to increase costs of materials and field labor, and to endanger the ultimate efficiency of the plant. Additional time spent on engineering before construction begins usually can save thousands of dollars in materials and thousands of man-hours in the field.

Better engineering is the basis of The M. W. Kellogg Company's construction business, and the reason for its reputation among leading oil refiners and chemical companies the world over. If your firm is contemplating new petroleum or petrochemical processing facilities, it will pay you to investigate Kellogg's better engineering approach to the problems of rising labor and materials costs.

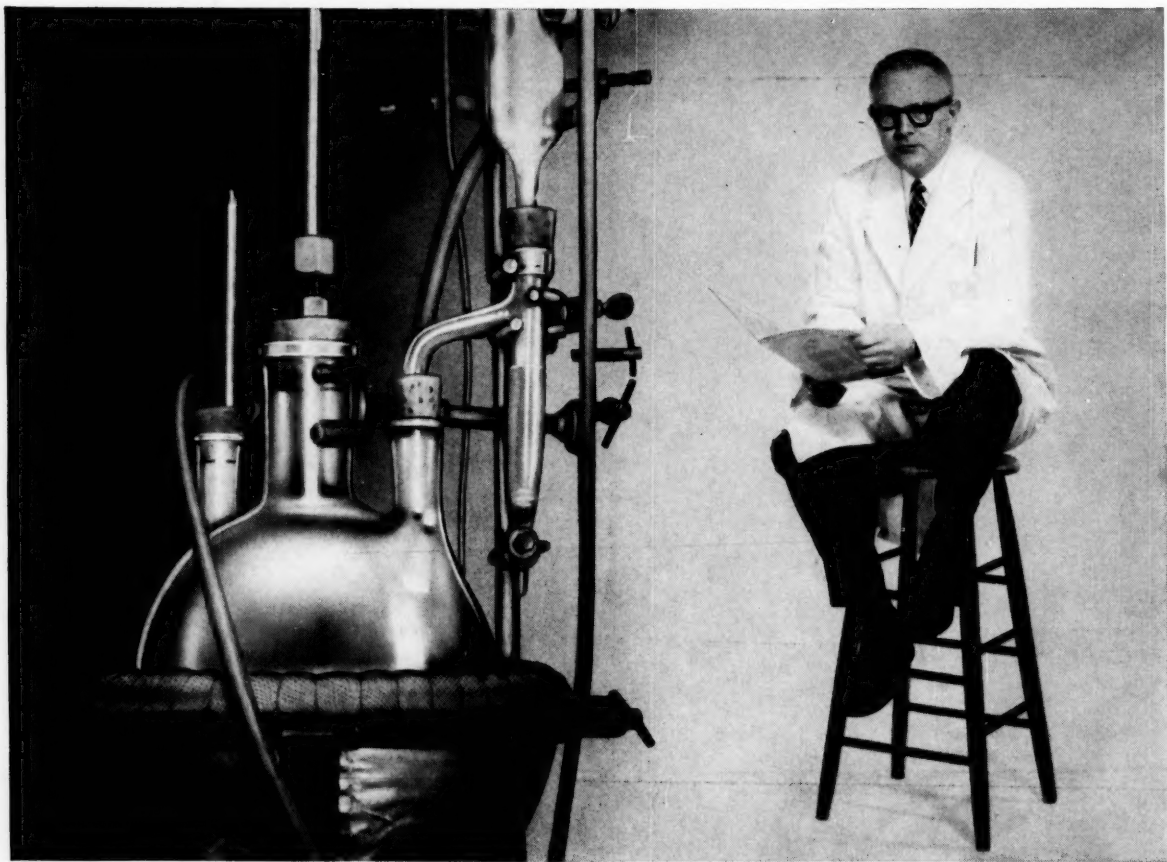


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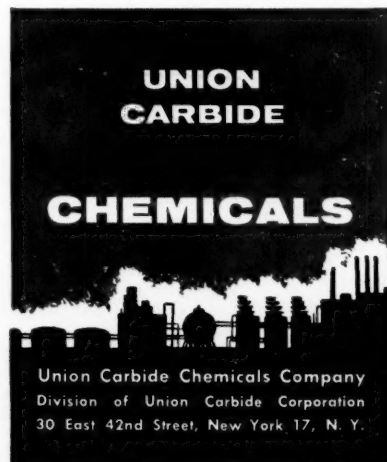
ADHESIVES—Homopolymers of 2-ethylhexyl acrylate are useful as adhesives and bonding agents.

TEXTILE FINISHES—Copolymers of vinyl acetate with higher acrylates are suggested for finishing cottons.

LUBRICATING OILS—Investigate copolymers of higher acrylates for viscosity index improvers and pour point depressants.

Applications don't stop here! A roundup of known and potential uses for the higher acrylates and ethyl acrylate, butyl acrylate and 2-ethylhexyl acrylate are described in—**ACRYLIC ESTERS (F-7434)**—For a copy write Union Carbide Chemicals Company, Department H, Room 328, 30 East 42nd Street, New York 17, New York.

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